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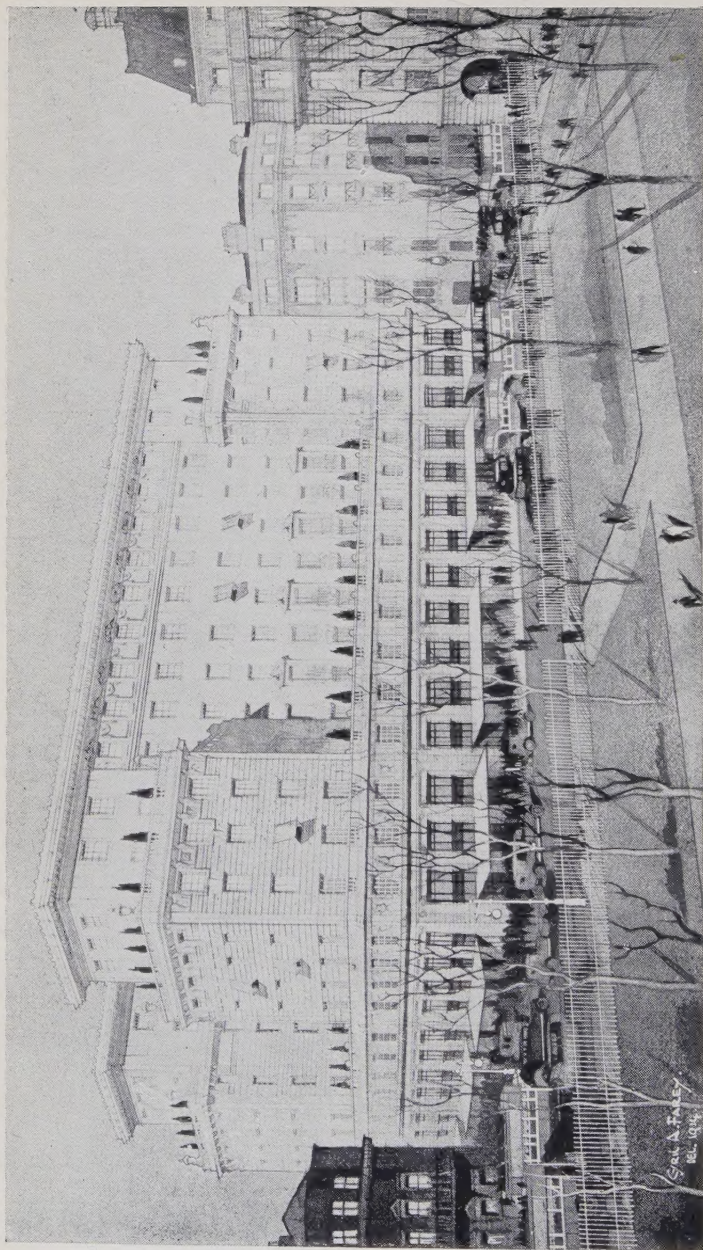


LAYMEN AND THE NEW
ARCHITECTURE

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Thomas Hastings and Professor C.H. Kelly, Architects.

THE NEW DEVONSHIRE HOUSE (see p. 104).

Frontispiece.

LAYMEN AND THE NEW ARCHITECTURE

BY

MANNING ROBERTSON, A.R.I.B.A., F.R.A.S.

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To
B. O. D. E.

PREFACE

THE future of the new architecture is dependent not so much upon the architect as upon the layman. The architect, in England and abroad, has begun to realise an architecture that translates our practical needs into a reasonable twentieth-century art form; but the layman alone can decide whether the rebirth that is now stirring the architect's world is to be a powerful general movement towards orderly dignity and real beauty, or whether it is to perish of inanition through lack of public appreciation and support. Our modern towns provide sufficient evidence that architecture, during the past hundred years, has slowly withered. Is this not primarily because it has been shelved by the layman as "a technical subject," and confused with archæology, until the public, educated and uneducated, has forgotten what architecture really is? This book has been written, not with the ambitious purpose of explaining what architecture is, but rather of suggesting points of view that may help to quicken interest in an art movement that is not at present fully appreciated even by the most cultured among laymen.

MANNING ROBERTSON.

HUNTINGTON CASTLE,
CLONEGAL,
IRELAND.

January, 1925.

ACKNOWLEDGMENTS

THIS book is virtually a collaboration, and to thank a collaborator seems inadequate; I can only say that my wife is responsible, not only for that portion of Chapter X. which I have quoted as a feminine opinion, but for much else, notably Chapters VII., XIII., and XIX. Her constant help from beginning to end has made the production of this book possible.

I have embodied here and there some extracts from articles previously published, and for permission to reproduce these I am indebted to the editors of *The Builder*, *The Architects' Journal*, "*The Times*" *Trade and Engineering Supplement*, *The Irish Times*, and *The Outlook*; the four chapters on elementary principles have been adapted from a series of articles that appeared in *The Home Reading Magazine*, the journal of the National Home Reading Union. I also wish to thank those architects who have kindly lent me drawings and photographs, and the Editor of *The Builder* and the British Commercial Gas Association for the loan of line blocks. The Stockholm Academy, the Station at Helsingfors, the Farmers' Bank, and the Pensions Office are reproduced from *The Architects' Journal*; the perspective view of Liverpool Cathedral and the New Buildings at Clare College from *The Builder*; and the Church of St. Louis from *L'Architecte*. The view of Lhasa and the elevation of the Banqueting Hall are taken from Fergusson's "History of Architecture." More particularly am I grateful to Mr. Stanley Hamp for the dry-point specially prepared to illustrate the fantasy in Chapter XIX.

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LAYMEN AND THE NEW ARCHITECTURE

CHAPTER I

THE FOUR CIRCLES OF RECEPTIVITY

WHAT is architecture, and what is its place in the world ?

Few architectural laymen will deny architecture a place with the other great arts—music, literature, painting, and sculpture; but it may well be accorded this position without being endowed with the one attribute that matters—reality. In considering the claims of architecture to be among the real forces of the world, and in examining, as we must, what we mean by “reality,” we can work more freely if we discuss, not architecture by itself, but the art world as a whole, and choose our illustrations from whichever of the arts seems to offer at the moment the most suitable example. If the art world, as a whole, and hence the art of architecture in particular, possesses a real significance, as distinct from an ephemeral æsthetic value, then every phase of it, viewed from every angle, becomes important, and we may with the more assurance examine what part it ought to play and what part is actually allotted to it in everyday life.

Were we permitted to visit another planet, the first question we should be asked on our return would be what the inhabitants looked like, and what were the dwellings they lived in. This would form our primary

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basis of judgment in assessing the grade of their civilisation. If we apply this test to our islands on this planet we discover a warped civilisation, since to possess laws, drains, and motor omnibuses does not make us socially responsible, and until we inhabit seemly dwellings ourselves, and erect buildings of real dignity for our public activities, we shall remain undeveloped. We cannot, however, expand our architectural culture until we obtain the whole-hearted co-operation of the layman, and it is with a view to invoking his aid that this book has been written.

Metaphysical speculations need not enter into this discussion, but we may use an applied philosophy, much as we would handle an applied science, in a survey of the world of art as a whole, of which architecture is an essential member. In applying a philosophy to art values let us borrow from an eminent musician, take a figure representing a philosophical significance, and then see whether this will be found to accord with the facts as they present themselves. It may be objected that the figure is not acceptable; if so, neither will be the application, but at least there will be something to discuss, and a basis of relationship between art and life will suggest itself. It must be stated emphatically at the outset that we must not hope to discover anything new, but that thousands of others have arrived by different routes to the same general conclusions possibly justifies the attempt to formulate a theory of architecture's true function, as co-ordinated with the facts of life.

Sir Walford Davies once suggested that we can regard musical appeal as consisting of four concentric circles, each enveloping the whole of the preceding circles, and also adding its own contribution. There

is the primary circle of the sensational appeal; next, surrounding and enveloping it, the emotional; then comes the intellectual; and finally, outside, but embracing them all, the intuitional or real. If it is applicable to music, as the writer believes it to be, this image must also apply to the whole field of art values. It would be impossible here to examine the full justification of this figure, except in seeing how far it accords with what can be observed; neither is it necessary to enter into the abstract philosophy behind it; but, accepting it as one which many artists will appreciate, and everyone can understand, let us see how we can apply it to architecture, and try whether, through it, we can find that architecture, with the sister arts, is merged into religion and spiritual forces generally.

We may expect the first circle—the sensational—to embody primitive expression: the drum beat and the megalith are both derived from the sensational or “dramatic” impulse, which is among the earliest of human modes of expression, and which persists in power at all stages of development. It does not end with the primitive, because the virtue of the figure which Sir Walford Davies has suggested lies in its capacity for envelopment and expansion; it is not merely a detached tabulation. In the second circle the primitive call of the tom-tom is evolved into the powerfully emotional rhythm of the Arab Aissaouïa; the dramatic and emotional possibilities of the second circle expand in the third into the intellectualised Western mazurka, and the sensational, passing outwards, finally achieves its apotheosis in such works as the Seventh Symphony, and in the four drum taps that open Beethoven’s Violin Concerto. In many of the greatest works of art

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one or other of the circles may predominate to the virtual exclusion of the others. For instance, we can agree that the music of Wagner is more emotional than intellectual; the Bach fugue is extremely intellectual with very little emotion; the Church of Santa Sophia at Constantinople is richer in the sensational and dramatic than in the qualities of either the second or third circles. And yet all these creations reach the fourth circle and convey a real message. But the first circle by itself contains only the sensational and dramatic, such as the primitive beat of the drum.

The second circle, the emotional, is the next phase, and its boundaries contain the art expression of the bulk of mankind. While it is always dangerous to cite illustrations in definite works of art, yet one can safely quote phases of art which are limited by one or other of the circles, and do not go further. To identify another purely emotional phase in its most restricted sense we must turn to those works of art that satisfy people who either are not intellectual or have, for the moment, no aspiration towards anything of an intellectual order. The popular musical comedy waltz, the song "The Rosary," the romantic "best seller," the picture "Reunion," and the gorgeous restaurant interior, at once suggest themselves.

Turning now to the third circle. The purely intellectual appeal is illustrated in the chess problem and the exercise in counterpoint that please us with their elegance and delicacy of thought. But, as we have insisted, the third circle comprises both the former circles, and may therefore be highly charged with drama and emotion, as well as presenting, through the intellect and the senses, the serious

æsthetic quality. Here we attain the highest perfection of technique, mastery of materials, and, above all, the æsthetic and poetical appeal. It is art in its self-sufficiency. When we mention the poetical, let us be clear as to what we mean, and say that it is an imagery of the world around us; it is the keenest reflection of its charm and poignancy as interpreted by someone with exceptional insight, and presented to other people through an art medium, often in the realm of fancy. It is an associative image. In seeking for examples of the highest in the third circle of art we must turn to "the age of reason," which produced, luxuriously in France, and more fastidiously later on in England—notably at Bath—a series of extraordinary perfect architectural creations, an elegance and refinement of expression, and a delight in æsthetics that have made the coarsened products which succeeded it appear vulgar and uncouth. The apparent contradiction so often visible between æsthetics and morals vanishes when we consider that the intellect is limited to its own range, and contains bad as well as good; it follows that supreme works of intellectual and æsthetic art can emanate from men who are unmoral, or who deny the existence of anything higher than reason; hence the creative artist may produce highly intellectualised work that is demoralising or even actively vicious. Social morality is itself in the third circle, and can be discussed on a purely anthropological basis, though its natural association with religion has tended to lift it into the spiritual region.

There are probably few great dramatic, emotional, and intellectual works that present only an æsthetic appeal, and do not overlap, if sometimes without the knowledge or intention of their creator, into the

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fourth circle—the intuitional, mystical, or real. Man's nature is complex, and while we cannot say that he who produces a truly mystical work of art is necessarily a good man, we can say that he must have the spiritual impulse, however much this may be accompanied by human failings and weaknesses. In the words of Oscar Wilde, a man may lie in the gutter and look at the stars. We can, of course, never eliminate the personality of the individual contemplating the work. He sees it only through his own lens. He is limited by his capacity, and the work itself becomes distorted for him if his outlook is distorted.

It is only when we reach the fourth circle that we can discover art identified with religion, though they may be found in association before. The third circle takes us into the highest realms of the intellect, but if we would proceed further we must leave the intellect behind. We can get no help from others—only guidance. The sceptic at this stage will wince, but he must be reminded that the universe is not yet explained. Science has recently told us that our geometry, which seems so pleasant, reasonable, and logically inevitable, is only true in our imagination, and approximately true in the small affairs of everyday life. If we are unjustified in our conception of space and time as separate entities, and if the geometrical properties of circles and triangles are inconstant, can the sceptic complain if we ask him to believe that the recesses of the human personality are more complex than suits his desire for easy classification? Although there is no scientific proof for the existence of the mystical, there is certainly nothing to disprove it on scientific grounds.

The fourth circle must be regarded as infinite in

extent, and it must be approached from a new direction if we are to visualise its significance in any terms but its own. We cannot define the mystical in terms of common speech to be understood and accepted by those who have not experienced it. The attempt has always meant failure, and has, if anything, strengthened the rationalist position. The knowledge is beyond empirical proof, but scientific proof could in no way strengthen the conviction of those that hold it. Let us, then, examine into the strivings of man after deeper knowledge, and see whether his religious aspirations are not merged into the province of the fourth circle, as would be natural if both religion and art exist to establish a personal relationship with an outside spiritual force.

Man finds himself in a world of struggle and suffering, and if he contemplates his surroundings, it is difficult for him to believe, even when guided solely by his intellect, that the whole thing is an accident or purposeless futility; neither can he see any prospect of ultimate perfection in the world. The only reasonable hypothesis seems to be that there exists a purpose, and if once we admit a purpose, it can only be found in the constant struggle between the impulse of good and its negation, represented by evil and chaos. If we thus conclude that we are taking part in a real struggle between good and evil, this conviction postulates some permanent value for the positive quantity of good when it has overcome the negation of evil. In admitting that the good has a real and lasting value, we must of necessity acknowledge a further use for it—if one may so put it—on another plane of existence of which we can form only a vague conception. From

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this sense, or conviction, religion in all its variety of interpretations has its source; and that ethics has been added to religion is evidence of the existence of the purpose of good. If we expect scientific proof, we are again disappointed, but we can obtain the evidence of individual experience. The artist, and very often the scientist, can sometimes glimpse a reflection from a more permanent and real world than this, and the existence of this reflection amounts to proof for the mind that can apprehend it.

That this proof is overwhelming in the mind of the great artist is borne out by the words of one who has been described as a free-thinker—Beethoven: “I have no real friends. I must live alone. But I know that God is nearer to me than to many others in my art, and I commune with Him fearlessly—I have ever acknowledged and understood Him. Nor have I any fear of the ultimate fate of my music; for the man who understands it will be freed from much of the misery which others drag about with them.”

The conception of art at which we have arrived is not consistent with the view that its beauty exists only to give us pleasure. That its reflection of the beautiful should, and does, give pleasure is obvious, but incidental. It would be hard to maintain that “Macbeth” gives us pleasure in the accepted sense of the word. It is terrifying and gigantic: its appeal is superhuman rather than human; we are not only watching the unfolding of events narrated in the story, but are conscious of the feeling that what we are witnessing is a symbol of some reality behind, something too overwhelming for our direct gaze. It is this sense of spiritual liberation, sublimely expressed in “Abt Vogler,” that stamps a work

of art as eternal, and places it in the fourth circle. It interprets in terms appropriate to this shifty and transitory world impressions that emanate from a real and permanent world. Its beauty is more than earthly beauty. The arts are among the forces that mirror varied aspects of the Great World, and reveal them to us of the little world. Art in its fullness is thus the real translated into the temporal, and not the temporal clothed in an æsthetic form as transitory as itself. It follows, then, that architecture is not merely construction clothed in an art form, but is rather an art form interpreted in a constructive and practical way.

We have thus arrived at the conclusion that art is a human activity that possesses eternal significance, and that if we do not use it to the full, or recognise it only in its lower circles, we are shirking one of the most vital activities for which we are responsible. Art can so readily be confined within the third circle, and worshipped as though it were self-contained as an intellectual or æsthetic pursuit. Like all mystical forces, it gains its strength through the elemental and through simple things. The mischievous spirit of Puck constantly escapes and cuts a caper in the greatest works; this and a spirit of grotesque humour or farce are met sometimes in the most unexpected places, as in the creations of Shakespeare and Beethoven. Ariel, the Clown in "Anthony and Cleopatra," the bassoon in the "Pastoral," and the astonishing octaves in the eighth symphonies, the whimsical animals beloved of Dürer, and the grotesque cathedral gargoyle, reflect something almost more elemental than drama. Usually fantastic, in a sense, such may be called practical jokes—jokes that are sometimes of a *macabre* nature com-

parable to that of the ex-convict, who was called upon to design a prison, and who treated handcuffs and other symbols of captivity as decorative features in the design, much to the annoyance of the authorities when their attention was called to the original nature of the ornament. The man who dresses up at Christmas is a public benefactor, and he who can translate this element of fun into terms of architecture is a genius, provided that he has something worth saying to which the dressing up acts as seasoning.

If the following chapters appear at times to drop to an everyday level, it is through the author's conviction that architecture cannot play its proper part in the world until it is brought into relationship with everyday people and common needs and is co-ordinated with them. The spiritual force of art can be found through the smallest as well as through the greatest, each in its degree, but it can only rise through the humblest beginnings.

CHAPTER II

THE THREE CIRCLES OF EXPRESSION

MANY laymen have complained that there exists no generally recognised book to which they may refer for help in understanding architecture. Ruskin attempted to supply this need, and his magnificent failure lies embalmed in so many volumes that few have had the confidence to embark on a similar venture. The cultivated man with a representative modern library can point to his Hints and Guides concerning pictures, engraving, ceramics, furniture, and almost every subject of cultivated interest; but although it has been approached from many directions, architecture remains without a popular chart.

This omission is not so astonishing as it appears, and that it exists is a tribute to the elusive quality of the art, a quality which it shares with music, where there is a corresponding absence of popular signposts to understanding. One doubts whether the omission can ever be rectified in either of these arts. Architectural understanding springs from many origins, more than could possibly be sketched, tabulated, or indicated; but if we can discover no guide, we may yet hope for inspiration aroused by an interest in the elements, influences, and ideals of which it is composed, and thus set up a point of view from whence architecture may be surveyed. A picture, however great, is a single work of art; it can be seen as a whole at a given moment. Its

musical counterpart, although a single work of art, is conveyed through a progressive series of impressions. In the same way, an architectural creation is a balance of complexities consisting of at least four sides, a plan, an interior, construction, surroundings, and a purpose; it cannot be seen as a whole at a given moment, and if we wish to trace some of the influences from which modern architecture is derived, we must approach the task with a fitting sense of these complexities and many others which are inherent in the nature of the art.

In considering "the four circles of receptivity" we have seen that the second or third—the emotional or intellectual—may predominate, and that the primary or sensational appeal is generally present in both. We cited Wagner and Bach respectively as examples of these two channels of appeal in the best music. The distinction between the two modes of expression is so general that their interaction may be said to dominate all constructive and organised effort. Under other names they are found in religion, philosophy, and social relationship; and in art they determine the elements of form. The emotional second circle may be called the impulse of freedom; the intellectual third, the impulse of order. Freedom and order can coexist amicably, but any given phase or work of art will generally express itself mainly through the one or the other, and we must remember that it is chaos and not freedom that is the antithesis of order. The fourth circle—the ultimate reality conveyed through the finished work—can only be arrived at through one or more of the other three, and we can therefore leave it out of account in considering the material expression of form and design.

In architecture we find freedom represented in Gothic and order in classical expression (which, of course, includes Renaissance architecture); these expressions, in turn and together, have dominated our Western civilisation. Byzantine, and all Eastern architecture, is essentially a free, as distinct from an intellectualised and ordered, expression, but we need not concern ourselves with it at the moment. It will at once be apparent that Gothic architecture appeals to our sense of the dramatic and emotional, and classical architecture to the intellect, with the dramatic force still strong in the background. The main physical characteristic of Gothic is its verticality and its effect of mass, while the classical is the architecture of the horizontal line and of the intellectual æsthetics of order. We find, therefore, the suggestion that we may identify the vertical line with the emotional circle and the horizontal line with that of the intellect. It is, perhaps, not carrying the parallel too far to suggest that the upright symbolises the driving force of the emotions and the transverse beam the restful tranquillity of the intellect.

Classical architecture is curiously ideal, since it gives the appearance of detachment from function. Its appeal—intellectual and abstract—is based upon the most perfect expression of symmetrical form and the balance of members. It is the construction of repose. Gothic architecture is organic and resourceful, and its appeal—dramatic and emotional—is the creation of northern vigour. Every member is alive and active; it never rests; in the interdependence of its parts a Gothic cathedral resembles a child's house of cards: remove a card and the house collapses. The great central vault exerts a

powerful thrust on the wall over the arcade; this thrust is in turn transmitted to the outer wall by flying buttresses, and the outer wall is held in place by outside vertical buttresses, themselves made the more massive to resist the thrust by being crowned with heavy stone pinnacles.

The classical and Gothic traditions have survived in many lands through many centuries, and they are both as firmly rooted in England as the oak. The fellowship of English brick, oak, stone-work, and craftsmanship, imparts a unity to the Tudor house and its Georgian neighbour. Neither contradicts the other, and together they provide harmony instead of melody in the English village. A deliberately built "period" village would be as unnatural and absurd as that modern affectation known as "the period house." It is when these forms cease to develop naturally that bad architecture appears and incongruity arises. When we copy past forms we get the uninspired chaos of the modern town, and only then is a "battle of styles" a possibility.

Order and freedom have their types in nature. The Palm, classical and sophisticated, achieves ordered grace; its curves are elegant and ordained; it admits freedom, but only to preserve personality; it is never emancipated. The Cedar, with its muscular force, is constructive in its strength, but its spirit is independent, and its quality, Gothic freedom. It appears almost conscious of its attraction as it extends a powerful and unexpected limb.

Having outlined the basic influences from which our architectural tradition is derived, let us now look ahead and try to see where we are going. Architectural opinion, whether here, in America, or on the Continent, is driving in the same direction.

The new architecture, referred to in the title of this book, tends to rely mainly on the sensational or dramatic appeal, and to use the other circles indiscriminately according as their use seems most appropriate at the moment in expressing the purpose of the building. We shall therefore find that definitely classical and Gothic features will disappear, and in their place we shall see the dramatic effect of large masses, unbroken surfaces, and deep bands of shadow, with emphasis laid on texture and colour. The intellect will play its part chiefly in construction, in what one might call the intellect of engineering that so readily adapts itself to the sensational in art. The Forth Bridge and the Battleship are inspiringly sensational, but they were designed solely as extremely efficient pieces of engineering. The Tower Bridge would likewise be inspiring if its construction were not clothed in an emotional jacket.

It seems audacious to ask the reader to travel to so remote a land as Thibet for the most telling and comprehensive illustration of the type of architecture which is now being evolved in England; but a glance at the photograph of the seventeenth-century palace of the Dalai Lama, at Lhasa, will startle any student of present-day work. It might well be a reproduction of a prize design for "a block of flats in concrete and brick, situated upon a hill, with industrial buildings and offices at the base." To describe it, as seen in the photograph, is to describe our "new architecture." The bold silhouette of the whole mass, the batter (*i.e.*, the slope) of the plain cliff-like walls, and the stepping back of the upper storeys, help to give an impression of unity with the hill, as though the buildings had grown where they stand. The sense of drama is heightened by the

upward sweep of the lines of windows, and colour is introduced in the two great red brick pylons, with their flanks of shadow, and bands of white that dominate the summit. Mystic significance rises naturally through simple grandeur. The purpose and function of this great monastic group are expressly emphasised in the regular fenestration to hundreds of cells, and we have an excellent example of how windows can be subordinated to a design without monotony or loss of cohesion. This disciplined treatment is a witness to applied order in a work of inherent freedom.

If we are justified in believing that the present movement in architecture is a reversion to dramatic principles, we should expect to find kinship with other obviously sensational expressions, and we can recognise "modern" characteristics, not only in Thibet, but in scattered instances in the ancient architecture of Persia and Peru.* It may be contended that neither Lhasa nor Persia represents a primitive civilisation. This is true, but they stand for an elemental attitude and for wisdom simply directed. Our present civilisation is certainly not primitive, but in architecture it is looking, not behind, but ahead; and in so doing is discovering old things afresh with the eye of youth.

The movement towards the first circle which we are now witnessing in this country is a corporate tendency, and not due to any particular person nor to any personal school of thought. Sir Edwin Lutyens is probably our best-known architect, and it is interesting to note that his designs stand slightly apart from the general swing. The façade of

* See "A History of Architecture," vol. ii., by James Fergusson (John Murray, 1893).



THE POTALA AT LHASSA.

Britannic House in Finsbury Circus is more sophisticated and romantic than the typical modern building—reminiscent perhaps of Sir Ernest George at his happiest—but it is one of those contributions of differences that help to infuse vitality. Our personalities, generally speaking, move with the tide, but they are not creating it. Individuals of genius have, of course, hosts of admirers, but they are not, nor do they wish to become, the moulders of personal “styles.” This is not to deny diversity of expression; varying needs, functions, and materials will effectually check too great a tendency towards uniformity, but the undercurrent moves the waters of architecture in the definite direction of stressing the first circle and subordinating the other two. We must bear this broad tendency constantly in mind in considering modern buildings. To appreciate them we must not judge in the languages of Gothic and classical, but in terms still more elemental. We shall find freedom and order more equalised than was the case with either Gothic or classical architecture.

The new architecture is logical, virile, and arresting, but it is essentially youthful and strongly conscious of its own origins. If it is to mature into a vigorous “style” of its own it must approach fruition slowly, and every attempt at hurry and virtuosity should be avoided. The present stage must be consolidated and forced home to a sufficient extent to become a public habit, and this alone may demand the labours of a generation. Then, from these sound beginnings, the more abstract qualities of architecture will gradually appear. It is perhaps dangerous to speculate upon the course of future development, but one may suggest that it is less likely to involve

changes of form than a gradually expanding range of expression in texture and colour. After it has run its full course in the primary circle, it may be through texture and colour that the other circles will in turn play predominant parts before architectural expression again sinks into exhaustion in nature's inevitable rhythm. Faith and encouragement are constructive forces, and the age that provides them is always robust and generous. If this generation can contribute the public interest and the faith, we may allow introspection to take a prolonged rest. It has been said that an age of creation is always followed by an age of criticism. Is it not conceivable that we may actually strengthen our powers of creation by subordinating criticism and introspection to faith and encouragement ?

In order to identify the present movement among much that is still incoherent or merely reminiscent, we shall look round and discuss buildings that are representative of the new architecture, and also the psychological and material influences that are at work moulding its form. But first we will make sure of our ground and consider some architectural elements. We can then see how these can best be acquired by the coming generation, and how our legacy of bad habits is to-day hindering architectural development.

The next four chapters are therefore of an instructional nature, and are intended for those who have not studied the barest elements that go to compose architecture. The initiated reader will perhaps excuse their presence and pass straight on to Chapter VII.

CHAPTER III

PLAN AND ELEVATION

MANY educated people are vague as to the precise significance of the words "plan" and "elevation"; any architectural drawing is often spoken of as a "plan"; it may, therefore, be excusable briefly to define these terms. A plan, in the strict sense of the word, is perhaps best described as a map of the building; it deals only with the horizontal plane. When speaking of the plan of a house we therefore mean the arrangement of rooms, etc., and the consequent shape on the horizontal plane. The elevation is the same in principle as the plan, but is taken vertically. We may, of course, have internal elevations, but as a rule the elevation means the outside drawn as it would look if we could see every part at the same time from directly in front. By this method only one side of a building can be drawn at a time.

The elevation is an extremely convenient method of illustrating a building, but clearly no one can ever see a building in elevation where everything is of its correct relative size, no matter how near or distant it may be. If we want a drawing of a building as we see it, we must draw it in perspective as viewed from a particular spot with the lines converging in the distance. But although perspective drawings may, like photographs, give us a good idea of what a building looks like, it is nevertheless impossible to

work from such drawings, because you cannot measure direct from a drawing that shows the parts that are further off as if they were smaller than those near by. It is extremely difficult to judge, from examining an elevation, what a building will actually look like. Consider St. Paul's Cathedral: from whatever point of view one examines it (except from the air) the top of the dome will be far away, and will therefore appear smaller than the nearer portions of the building; also the nearer portions must always hide the lower part of the dome. An elevation, as we have seen, disregards these effects, and shows the building as if we could see it all to its full size from directly opposite. Hence anyone who examines an elevation of St. Paul's Cathedral will hardly recognise it—its proportions seem wrong, the dome is immensely larger and higher than it appears in fact.

An elevation, as an aid to visualising a building, suffers from another defect—it deals only in two dimensions; we see the height and width, but we do not see how far forward one part of a building may project, what portions are recessed, and consequently what part will be played by shadow. This shortcoming can to some extent be overcome by the correct drawing of shadows on an elevation, but at the best elevations are dangerous guides as to the real appearance of a building. Working drawings, being always in elevation, must not therefore be treated as if they showed the true appearance of the proposed structure, although a good idea can be obtained by making the correct allowances. The section of a building is an elevation that cuts through the structure vertically to show how it is constructed. A clear comprehension of these three terms—plan, elevation, and section—is essential.

Architectural effects depend largely upon the relationship between plan and elevation. Where we have a symmetrical plan we shall naturally find a symmetrical elevation, and trouble generally begins when the requirements of the plan do not agree with the elevation desired. What, for example, is to be done if we want to match an existing wing with a building containing different accommodation, or if we want a completely symmetrical lodge? Such problems as these are constantly arising, and we must be clear as to how far symmetry is necessary or even desirable. Architecture owes much of its character to requirements peculiar to the special case, whether of accommodation, the shape of the site, or the character of the neighbouring buildings. To sit down with a blank sheet of paper, representing a flat hundred-acre field, to design the ideal house is a tenfold harder task than to design it subject to manifold restrictions, obedience to which at once imparts character to the building.

Some buildings are by their nature more or less symmetrical—such as churches, theatres, and museums; others, houses for example, are not naturally symmetrical. The Gothic and Tudor architects cared very little about symmetry, and, as we have seen, their work is freer than that of the classical and Renaissance exponents. If, for instance, the Gothic architect wished to build a house with a central hall, a drawing-room on one side, and a kitchen on the other, the drawing-room and kitchen wings would not match, and the difference between the drawing-room and the kitchen would be seen in the difference of treatment outside. But in a classical or Renaissance building the outside would be symmetrical, and the drawing-room and kitchen would

have to be of the same width, with windows in the same places; and these requirements are obviously prejudicial to the efficiency of the rooms inside. The later Georgians found the claims of symmetry to be so heavy a handicap that they allowed themselves greater latitude, and some happy effects were obtained when they sacrificed complete symmetry and expressed on the outside of their buildings the arrangement of rooms that was to be found within.

This brings us to the important question of what relationship ought to exist between plan and elevation. The two are obviously interdependent, but if we allow either of them to become entirely supreme we run quickly into absurdity. To emulate Procrustes and force a lop-sided plan into a shell that appears symmetrical on one or more of the elevations is wasteful and inconvenient. Likewise to carry the principle that the inside should be expressed through the outside to its logical conclusion would compel us to demonstrate the existence of housemaids' closets and bathrooms to the passer-by. Truth is said to lie in reconciled differences, and we are safe in asserting that the general lines of the plan should be revealed through the elevation, and that we should only aim at symmetry when our plan is of a symmetrical order.

Art principles, in common with all others, can easily degenerate into red tape; they must be respected as handrails, and not obeyed as handcuffs: did not Beethoven indulge in consecutive fifths, and Puccini revel in them? When we say that the interior of a building should, broadly speaking, be expressed outside, we must mean that a one-storey building should have this appearance from without; and yet in two of the finest examples of architecture—

St. Paul's, and Inigo Jones's Banqueting Hall in Whitehall—we find the contrary. These exceptions justify themselves, and show that the great artist may break all rules, but they in no way invalidate the general principle. Also, in the examples given, there were special reasons for the two-storey fronts. Wren had intended to build the façade of St. Paul's with columns running up the whole height, but finding it impossible to procure blocks of Portland stone of sufficient size, he divided the façade into two heights, as it is at present. The Banqueting Hall was only designed to be a minor feature to match three similar blocks in a vast Renaissance Palace extending from the River to the Park, and the elevation of the Banqueting Hall was a concession to the formal demands of the whole.

To what extent, then, ought we to aim at symmetry in modern architecture? The most practical course, and the most consonant with present-day needs, is to reserve symmetrical elevations for those buildings whose plans are by their nature symmetrical, and to allow our houses, offices, and shops all the freedom that the individual plan offers. The best modern domestic work continues the Georgian tradition, depending as it does upon restful simplicity and good proportion between solids and voids (*i.e.*, walls and door and window openings); but at the same time the influence of Gothic freedom is still with us. We find, therefore, two main lines along which good modern house architecture is advancing—the intellectual and symmetrical Georgian, where the roof plays an insignificant part, and is often concealed behind a parapet, and the emotional unfettered Tudor or gabled, with its sweeping roof surfaces and its hips and dormers. The one has the dignity

of restraint, the other the charm of homeliness and complete adaptability to the purpose of the plan.

The characteristics of these two types are distinct, and we cannot afford to lose either. Too strict an adherence to Georgian symmetry will not allow of a true interpretation of our modern everyday needs: we must have freedom in planning. But neither must we allow our liberty to run riot, since a town composed of gabled buildings, each planned regardless of formality, would become a jumble. We must reconcile the two. Where it is reasonably possible to obtain classical and symmetrical lines, we should welcome the opportunity afforded, but we must not be afraid of breaking away. Even when individual doors, windows, and other features may not exactly correspond, unity can be achieved through a judicious grouping of wings, roofs, and wall surfaces.

Curiously enough, it is in the workman's house that we most easily attain absolute symmetry. We have seen that the isolated house cannot by its nature be entirely symmetrical outside, but the same does not apply to two or more houses. In dealing, for instance, with a group of eight workmen's houses, we naturally get a symmetrical result. A block of four may provide the central feature, and the two end houses to this block will comprise the same houses reversed, while the two end pairs may be brought forward, and would match, also reversed, in every particular. Thus, symmetry is achieved without effort, and the same applies to streets where the two sides of the road can be made to correspond, especially if the road runs north and south, and so both sides enjoy the same amount of sun. Only the blind folly of Victorian methods (in which, if you wanted to build eight houses, you repeated the same

house eight times without even reversing, and thus balancing the two ends) could have overlooked such an obvious element in design. In case the reversing of plans is not obvious to the reader, it may be well to explain that eight houses of the same design which are not reversed at the ends are like eight teacups with the handles all pointing one way, whereas eight houses with the ends reversed are like the cups when the four handles on the right point one way, and the four handles on the left point the other. Cottage grouping is seen at its best in some of our old almshouses, such as those at Abingdon, Stamford, and Bray.

It must clearly be understood that the nineteenth-century house, in terrace or villa, plays the part of the Wax Moth in the beehive; it is an interloper, and is not architecture at all, therefore nothing constructive can come out of it, and we must keep our minds consciously clear of the villa when architecture is in question.

We shall consider grouping in detail in the next chapter, and all that is necessary here is to indicate that when you get a block, or series of blocks, of small houses, you naturally get a design which is symmetrical in all its parts, even to the size and position of the larder windows.

We are led, then, to the conclusion that where we find our plan lending itself to a symmetrical elevation, we should take full advantage of the opportunity, this being especially simple in the grouping of small houses, where the external symmetry is generally the perfect expression of the plan of the houses; but that we must reserve freedom to discard symmetry or to compromise to any extent that may be demanded by the plan.

CHAPTER IV

PROPORTION AND GROUPING

IN the last chapter we discussed the relationship that should exist between the plan and elevation, and we concluded that our modern architecture must reconcile the freedom of the "gabled" type with the dignity and order of the Georgian; we also decided the extent to which the elevation must be dependent upon the plan of the building.

We now come to the most elusive of architectural qualities—proportion.* It is impossible adequately to define either proportion or beauty. We cannot explain why Hamlet's soliloquy and Prospero's speech are so stirring, nor can we define why some melodies produce a magical effect, while others, apparently of the same nature, are commonplace. The most we can do here is to examine some of the elementary characteristics that conduce to satisfactory architecture.

Let us take a simple example: the eye is never satisfied with a division into two equal parts. To appreciate this we need only draw a rectangular elevation, 1 inch long and $\frac{1}{2}$ inch high, and repeat the same directly above the first, so that the whole figure is 1 inch square. The unpleasing proportion is at once apparent, but it disappears if we make the top rectangle rather lower than the

* See "The Principles of Architectural Composition," by Howard Robertson (The Architectural Press, 1924).

bottom one. Again, draw a rectangle 1 inch long and $\frac{1}{2}$ inch high, and draw a similar one $\frac{1}{2}$ inch off by the side of the first. If we imagine these to be the fronts of two separate buildings, the effect is bald and unsatisfactory; but connect the two together and draw an entrance with steps in the middle, and we get a satisfactory composition. The design has become a unity, with two wings connected by a central feature. If we place three of our rectangles in a row the effect is good, because the central block acts as a focus for the eye. Four blocks produce an effect of anticlimax, because there is nowhere on which the eye can rest.

In examining blocks in this way, it is natural for the eye to seek out the focus, and to be pleased and satisfied when it finds it. For this reason the central block, or group of blocks, is made more elaborate and more interesting and commanding than the wings, and the wings are kept relatively plain and free from any subsidiary focus that would detract from the main focus of the group. Thus, wings generally have an even number of windows, and the central block an odd number, or with a central feature to take the place of the middle window. It is primarily on such common-sense principles as these that formal architecture depends.

The rectangles we have been considering can, of course, represent either individual parts of one building—for example, the central hall and the drawing-room and dining-room of one house, or they may represent separate buildings. They may, for instance, each be a block of two or more workmen's houses, and it will be seen at once how great a field for ingenuity exists in designing a scheme of six or any larger number of small houses or cottages. One

block can be emphasised and others kept entirely plain by way of contrast; some can be brought forward, others set back; some may be L-shaped, others square; roofs can be simple or broken by dormers, and so on. It is depressing to remember the waste of opportunity exhibited in all our suburbs by the miles of monotony in the workman's house and the villa. How much more interesting would these dreary wastes be if one could look round and trace the arrangement of groups that was in the mind of the designer, and see how he had manipulated his design to work in with a sloping site, perhaps masking the drops in the roof by gables or projections, instead of knowing, as we do, that his mind was a perfect blank, and that to look for any trace of thought or design is a waste of time.

Another important consideration concerns the arrangement of solids and voids. The eye expects the corners of a building to be more solid than the central wall surfaces, hence weak-looking corners should be avoided. Often the effect of strength at the corners is enhanced by projecting the quoins. Again, the lower portion of a building should look stronger and more capable of supporting weight than the upper parts. To obtain this appearance the ground floor is often "rusticated"—that is to say, the individual stones are raised with a V-shaped joint to give the stones a rock-like appearance. Mr. Rutter* suggests that this device conveys the impression of a fortress, and this appearance of strength certainly renders rustication more suitable for such buildings as Government offices and town halls, than for clubs, shops, and other structures

* "The Poetry of Architecture," by F. Rutter (Hodder and Stoughton).

which are relatively secure from civil commotion, and whose purely peaceful intent may well be conveyed in the design. In more elaborate classical work the effect of additional strength in the lower portion is secured by using the strongest-looking columns at the bottom, and the more graceful type at the top. The Doric is the stoutest and strongest, and can be seen in the great entrance to Euston Station, which is an example of Greek Doric. Then comes the Ionic, familiar to us in the series of arches at Hyde Park Corner; and last comes the Corinthian, which is embodied in St. Paul's and in the Constitution Hill Arch at Hyde Park Corner. Of these three kinds of columns each has its own proportions, and its own appropriate details and surrounding parts. When the Romans adopted these orders from the Greeks, they made considerable changes in the details, and added two more called the Tuscan and the Composite, the former being an adaptation of the Doric, and the latter a cross between the Ionic and the Corinthian.

Most books on architecture concern themselves with the orders, and they have been pursued to death in recent years. Instead of being reserved for buildings of importance on suitable sites, they figure in every big municipal building, shop, and railway station; and over-familiarity converts what should be an imposing and exceptional feature into an everyday commercial commonplace. We will only concern ourselves here with showing how the orders are used to emphasise the strength of the lower part of the building, and the grace and lightness of the upper storey which has less weight to carry, and need not therefore exhibit the same appearance of stolidity.

We have already referred to the Banqueting Hall. If we examine this building we shall find all the principles we have been considering embodied in it. First, it is not divided into two equal parts. The lower part is higher than the upper; not perhaps so much so on elevation as one might expect because of the effect of foreshortening which has to be compensated, but the difference in height which exists in the elevation is more marked when the building

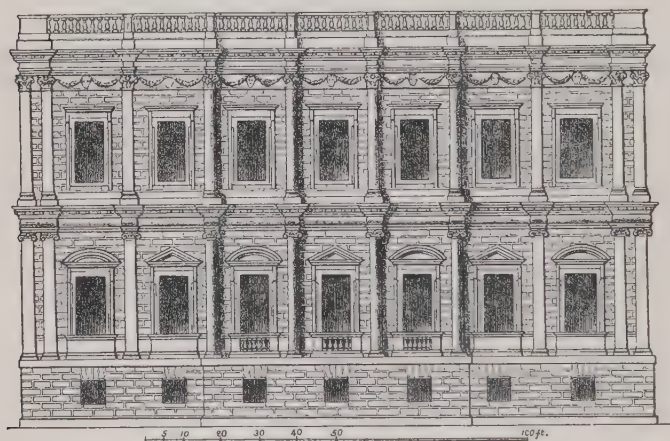


FIG. I.—BANQUETING HALL, WHITEHALL.

is viewed from Whitehall. Again, the central portion containing three windows is emphasised by a slight projection, while the “wings,” containing two windows each, are subordinated by being set back. The corners are stronger than the central piers, the effect being obtained by placing an extra pilaster at each end. The ground-floor portion is given solidity by the use of the stronger-looking Ionic columns, while the upper storey is treated with the more graceful Corinthian. The balance between openings

and solids is symmetrically perfect. This building also illustrates another important principle, that of framing in the design. The frame here consists of the strong angles joined near the ground by a rusticated plinth, and at the top by a heavy parapet. An example of the use of the orders in different storeys can be seen in the tower of the Bodleian Library at Oxford, where the five Roman orders are used, one over the other, according to their strength.

So far we have been considering classical proportions, such as are expressed through the formal and symmetrical design—buildings where the third circle is dominant—but there are also those which, although of a contrasting type, may yet be as satisfactory architecturally, such as the Houses of Parliament, west front, Windsor Castle from the river, and Magdalen College, Oxford. In these the first and second circles are supreme. They depend for their effect upon the sensational grandeur of the mass and the dramatic qualities of the sky-line. Their beauty is elemental, comparable to that of mountains and the bold effects of inorganic nature. To say that informal buildings are more closely related to nature is not, however, to claim that they are finer than the others. Is not the whole art of music based upon man's invention and remote from anything comparable in nature? Some of the finest buildings are to be found in both categories, but the principles underlying the proportions of mass effects, covering as they must an infinite variety, are obviously more difficult to trace home than those concerned with the elements of classical symmetry. Classical sophistication leads naturally to the appearance of ordered and intellectual simplicity, where each detail plays its part in building up the whole. Mass effect is to

a great extent dependent upon the grouping of apparently fortuitous parts, and upon the emphasis of the most telling feature.

The effect of mass grouping is nowhere better exhibited than in the Academy of Engineering and Architecture at Stockholm; the way the buildings seem to have grown where they stand on their sloping site, piling themselves up to the crowning cupola, provides an effect the grandeur of which must strike even the least susceptible. It is tantalising to analyse the elements of distinction in this group: we can recognise our primary circles embodied in the interaction of emphasis, contrast, and repetition. The rhythmic shadows near the sky-line, the relief of the vertical features in the flanking wing, and the sensational emphasis of the plain culminating block, rising from a graceful arcade, create a sustained effect as instructive as it is admirable. We may thank not only the author of this composition, but also the public spirit which is responsible for the virility of the present Swedish renaissance.



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CHAPTER V

MATERIALS AND CONSTRUCTION

THE most powerful factor in deciding the course of architectural development must be the materials used. The Greeks, in their great temples, employed large blocks of stone, and hence were able to develop a style dependent upon beams, whereas any country that relies upon bricks or small stones must of necessity make use of the arch. The principle underlying the arch is little understood: if we construct an ordinary semicircular arch formed of separate wedge-shaped pieces (known as voussoirs), even if it be only on the scale of a child's box of bricks, we shall find that the arch will support weight only if the sides (known as the abutments) are sufficiently heavy or rigid to prevent the arch from spreading. Where the abutments are too weak the arch will push them out of place and collapse. This peculiarity of the arch is of the greatest importance in building and in its effect upon architectural proportion. Mortar can only be regarded as a filling, and not as if it played the part of glue in furniture; its adhesive properties are feeble, and must be ignored in calculating the strength of buildings. In a Greek temple, or any structure where the arch finds no place, the building is fixed and stable, like a neat pile of bricks, and the piers and walls in an arched classical structure are strong in themselves to resist the thrust. But in a Gothic building, as we know,

each part is pushing or counteracting every other part.

If we consider an arcade containing a series of piers and arches, we understand at once that while all the central arches are stable because the thrust is counteracted by their neighbours, yet the end piers will be unstable unless they are either heavily weighted down or made bigger and stronger. This shows that the eye, in expecting sturdy corners, is only looking for something that, in an arcade, is a structural necessity. The need for precautions against thrust is exemplified in the dome of St. Paul's, which is tied round at intervals with prodigious chains, these being an integral part of the original design, but St. Paul's is a Gothic structure in a Renaissance setting.

The two main systems of construction are therefore the beam and the arch (which includes the dome). To these we may add the cantilever or bracket. When timber is the material used, the arch hardly comes into play, as timbers are generally framed up into rigid structures that exert no thrust, but lie as dead weights upon the supports; but even with timber when we get the large span "hammer-beam" roof, such as that in Westminster Hall, we find that the roof is not tied together direct across the bottom by a beam or rod, and this omission means that the feet of the rafters are always pushing outwards, giving a thrust that has to be taken up by heavy outside buttresses.

Among new materials by far the most important are steel and reinforced concrete, also known as "ferro-concrete." If we are to understand the architectural possibilities of these we must have a rudimentary knowledge of their character and pro-

perties, and we must not confuse them one with another. In a steel structure the whole construction as regards weight-carrying depends upon steel and nothing else. Charing Cross Bridge is an example; but in buildings where the weather must be kept out and the steel skeleton has to be clothed, the steel is usually concealed behind a stone face or casing that has little relation to the skeleton behind, as in the new buildings in Regent Street. The principles of steel construction are the same as those of timber, and the tendency has been to impart to the stone face the features appropriate to all-stone construction, and to disregard the skeleton altogether. Insincerity is death to art, and the stone pomposities of commercial street architecture have hindered the development of a legitimate expression and logical use of material.

Reinforced concrete construction relies on a different principle: here the steel is merely an assistant to the weaker part of the concrete. Consider a plain beam made of stone or concrete; if we place a heavy weight on the middle of it the beam is in danger of breaking from two causes:

- (a) The top part is compressed.
- (b) The bottom part is extended.

We can see how this happens by imagining a slab of indiarubber supported at the two ends, a weight being laid on the middle of the slab. The rubber will bend, and the central horizontal layer of rubber will be the only one that remains the same length when the beam is bent; for the rest, the upper layers have to contract and the lower layers have to extend. Now supposing concrete were a material like steel, which is as strong when you pull it as when you

compress it; obviously the beam would fail when the weight on it was heavy enough both to extend and compress it beyond its endurance. But concrete is not like steel. It will take some six times as much weight to crush concrete as it will to break it by pulling it. Hence, if you put a heavy weight on a plain concrete beam the lower portion will pull apart long before the top part is being compressed to its full limit. This is where the steel plays its rôle. A reinforced concrete beam contains steel bars near the bottom that are just strong enough to equalise the beam in compression and in tension. Thus a reinforced beam is some six times as strong as a plain beam of the same size. If we revert to our rubber bar we shall find that a cantilever must have the steel near the top.

Whereas steel construction differs little in principle from timber, except in strength and scale, reinforced concrete is virtually a new material altogether, and as such demands a new architectural treatment. The Stadium and the Palaces of Engineering and Industry at Wembley demonstrate what can be achieved in the bold massing of concrete, and when we come to consider modern buildings we shall find further uses for it.

Many imagine that we possess in concrete a royal road to cheap house-building, and it should be understood that concrete is only cheaper than brick when the material for concrete-making—gravel, clinker, or broken brick—is available close at hand, while bricks have to be transported from a distance. Reinforced concrete is unlikely ever to play a large part in cottage building, except perhaps in large schemes in suitable places. Where concrete is used for this purpose it is as a rule employed in blocks or poured

into moulds without the use of steel except possibly for the floors, which, however, are usually of wood.

The Government housing scheme carried out under Dr. Addison was the means of reintroducing many systems of construction that can best be described as "traditional" methods. In Devonshire, for example, "cob"* houses are the rule rather than the exception. The method employed is to build up a thick wall in clay and sand, to tread straw into the mixture, and to pare the wall down to the desired thickness afterwards. A wall of this kind generally stands on a solid base or plinth to prevent water from undermining the foot, and the outside is coated with lime and hair mortar. Another traditional method, somewhat similar to cob, is called *Pisé de Terre*, and consists of nothing more than earth of a suitable kind rammed between boards which are afterwards removed and the wall plastered over. These primitive methods at first sight appear rather absurd, but when properly used they are astonishingly efficient. The reason they are so little known is that the coating of plaster hides the construction, and one may see hundreds of old cob buildings in the West Country without realising that they are not built of brick or stone.

It is strange that roofing materials should be among the dominant factors in governing the plan. The explanation of this apparent anomaly is to be found in the difference in pitch or steepness that is necessary in tiled and slated roofs. A tiled roof, to be weather-tight, must be a good deal steeper than a slate roof. This means that with a tiled roof more space is wasted in the roof than with a slate roof of

* "Cottage Building in Cob, *Pisé*, Chalk, and Clay," by Clough Williams-Ellis ("Country Life Library").

the same span. In order to minimise this wastage it is economical to keep the span of a tiled roof narrower than that of a slated roof. Economy leads therefore to a plain square-type slated house, but to a shallow rectangular tiled house. This is the explanation of the long, narrow spanned houses that abound in Sussex in contrast to the squarer type which characterises slate districts. Certain tiles can be treated like slates and fixed at a low pitch—the pan-tile, for example, which is shaped like a shallow trough with a lip on one side to hook over its neighbour, and the Bridgewater, which is a large corrugated tile.

An ordinary wall built in 9-inch brickwork will not keep out the wet, which is apt to soak through, and a wall can be made weather-proof either by “rendering” the outside of a 9-inch wall with a coating of cement and sand about 1 inch thick, or by building what is known as an 11-inch hollow wall. This construction is relatively new, and consists in building two walls, each $4\frac{1}{2}$ inches thick, leaving a 2-inch clear space between them, the two walls being held together by galvanised iron ties. The space thus prevents any water from making its way from the outer to the inner wall. In order to keep to the $4\frac{1}{2}$ inches of thickness the bricks in such walls must be laid lengthways and consequently no ends of bricks are visible on the outside, except at the corners. This enables one to diagnose at a glance whether a new brick house is built with a hollow or a solid wall. It is worth mentioning that where, as so often happens, hollow walls let in the water and the damp appears in circular patches inside, this is due to gross carelessness in building, when mortar droppings are not removed from the ties in the wall,

and these droppings conduct the wet from the outer to the inner skin.

Construction plays so large a part in architecture that some understanding of its elements is necessary to architectural appreciation, and likewise different materials possess such diverse properties that the architecture suitable to one material will not be applicable to another; these considerations have led to the inclusion of this chapter.

CHAPTER VI

TEXTURE AND COLOUR

ANYONE remotely interested in painting or tapestry realises the importance of texture, and the texture of building materials is of no less importance in contributing to architectural effects. A design may be good in itself, but if carried out in a lifeless material it not only loses an opportunity, but may even appear commonplace. During the last sixty years the public has not only allowed design practically to disappear, but it has become blind to the texture of buildings. The aim has been to achieve uniformity of colour, to give preference to shiny bricks and tiles, and, in fact, in every way to encourage ugliness and drab mediocrity. The care with which a builder will pick out bricks all of one colour for the front of his house can only be likened to the care that might be taken by a musician to see that all his notes were of the same length. It frequently happens that an architect finds just that range of colour necessary to give character to his brickwork in the heap of bricks that has been put aside by the builder as not being "true to colour." Pressed bricks are by their nature shiny and insipid in comparison with hand-made bricks, but they are cheap and must be used, only they must be used in the right way if we are to get the best out of them.

The Addison scheme was the means of illustrating how the pressure of economy can sometimes force

us to build architecturally when all our inclinations, education, and environment are pulling us towards standard ugliness. Often at the outset of a large scheme it was impossible to obtain cheap tiles in sufficient quantities from any one source to roof the whole of one block of houses, and as a result there was the danger that the supply of any particular batch of tiles might give out half-way; the original colour would then cease suddenly, and a new one begin. To obviate this it became the practice to mix two or more batches of tiles of different colours at the beginning; thus uniformity was abolished, and (quite by accident) the roofs became interesting instead of being dull and plain. The effect of these roofs is excellent, and the broken colour gives a texture and animation to common materials. The same happy result can be achieved with slates, for if two depressing colours are mixed we do not necessarily get a depressing result, but often a definite tone value.

Everyone knows that he is expected to admire good old brickwork, and yet most modern buildings show a neglect of tradition in essentials and a regard for it only in a lifeless imitation of details. We have already noted that the modern 11-inch hollow wall forbids the use of the brick "header" in the outer wall, and this in itself means a serious loss in texture in such buildings as cottages, schools, and small shops. Tudor brickwork relied for its effect to a great extent upon zigzag and other patterns formed by blue headers, but these, in the hollow wall, can only be seen at the angles. To compensate for the loss we can follow certain broad rules: to use the roughest-looking bricks we can find, provided that they are good and durable; to vary the colour of the

bricks to the greatest possible extent; and to keep the mortar joints white to afford a setting to the colour of the bricks. Mortar is unfortunately often deliberately blackened by the addition of soot, and the tone value of the brickwork is thus lost. Modern brickwork in its full beauty can be seen in the Midland Bank's new premises next to St. James's Church, Piccadilly, where Sir Edwin Lutyens has used 2-inch bricks with telling effect; and the same kind of treatment can be seen in the Church of the Annunciation, Bryanston Street, where Mr. Walter Tapper's beautiful brickwork is already yielding pride of place to the London soot.

The texture of a building does not, however, depend only upon that of the individual material, but it includes the effect obtained by contrasting one material with another, and we can best examine some of these possibilities when we come to consider typical modern buildings. For the present we will restrict ourselves to individual materials and pass on to the treatment of concrete surfaces. Exterior concrete surfaces can often be left as they are when the "shuttering" (or boarding) forming the mould has been removed; the surface will then show the grain of the wood and, besides thus honestly proclaiming its origin, the wall is left with a reasonable roughness of texture which can be whitened and upon which the weather can play. Concrete blocks are often used, being built up like stones, and we may obtain variety by using differently coloured materials, such as red and yellow gravels and broken brick, a treatment that is well illustrated in some concrete cottages at Braintree, where patterns are formed of differently coloured concrete blocks. It is dangerous

to tint concrete artificially* without careful experiment to make sure that the concrete is not weakened by the colouring matter. We often hear it said that it is a pity that concrete is such an ugly colour. But is it ugly? The peculiar gravity of dry earth is a familiar tone in nature, and concrete is pleasantly susceptible to the influence of time and weather. Smaller work lends itself to colour-wash, but in massed effect untouched concrete is full of dignity. The vast masses of the Wembley Exhibition may be dour, but they are not ugly, possessing as they do much in common with similar expanses of granite or limestone. Concrete can also be treated by the application of mosaic, faïence, slabs of marble, or other material such as bronze, and, of course, by plastering and painting.

There are numerous extra aids to colour which are extensively used abroad but have almost disappeared in England. Outside shutters brightly painted, awnings, village signs, and trellises all add to the gaiety of the village; and the artist is grateful for the disappearance of the white lace curtain, especially if thereby he can gain a glimpse of a cheerful casement blind. Different coloured casement blinds or curtains in different rooms do not harmonise on the outside elevation, and the architecture would be enhanced if the house curtains were all lined with the same material and colour, to present outside coherence. We have fallen into the habit of imagining that colour is only suitable for countries blessed with abundant sunshine, but our ancestors coloured all their buildings—even the great cathedral interiors; and if colour is at its best in sunlight, this

* See "Concrete and Cement as Decorative Materials," by T. P. Bennett (*The Architects' Journal*, December 24, 1924).

should be an additional incentive to us to make the most of the hours of winter sunshine. Our fear of colour renders our winter duller and greyer than it need be, and robs our summer of half its gaiety. We go to Naples and sketch the great terra-cotta pots that enliven the foreground, forgetting that we can buy and enjoy them at home.

Granting the great importance of colour in architecture, it follows that it can be wrongly used, and we must for a moment revert to the suburban house to see whether something cannot be done to unpaint that dreadful lily. The woodwork that apes Tudor half-timber is usually painted a dirty brown, and often the fake extends no further than to the painting of brown strips along a cemented face in imitation of wood. A wonderful improvement can be effected by painting these out altogether and bringing the strips to the same tint as their surroundings. Monotonous and shiny brick surfaces are better colour-washed. The stained-glass tulips and swallows over the hall door can only be removed bodily and replaced by clear glass or "hammered" glass which has a surface sufficiently interrupted to prevent people from seeing through it. Speaking generally, we must not be afraid of good strong primary colours, but let us give dirty browns and laurel green a respite. Temporary buildings of timber or corrugated iron are the chief victims of our colour outrages. When it is not suitable to use a bold and clean colour scheme, then such erections, tarred, with red roofing, cease to be eyesores, and become definitely pleasing.

To deal with shadow under the head of colour is not as paradoxical as it may appear. To a child a shadow is black or grey; to the artist it may be indigo or sienna. Anyone who studies shadows will

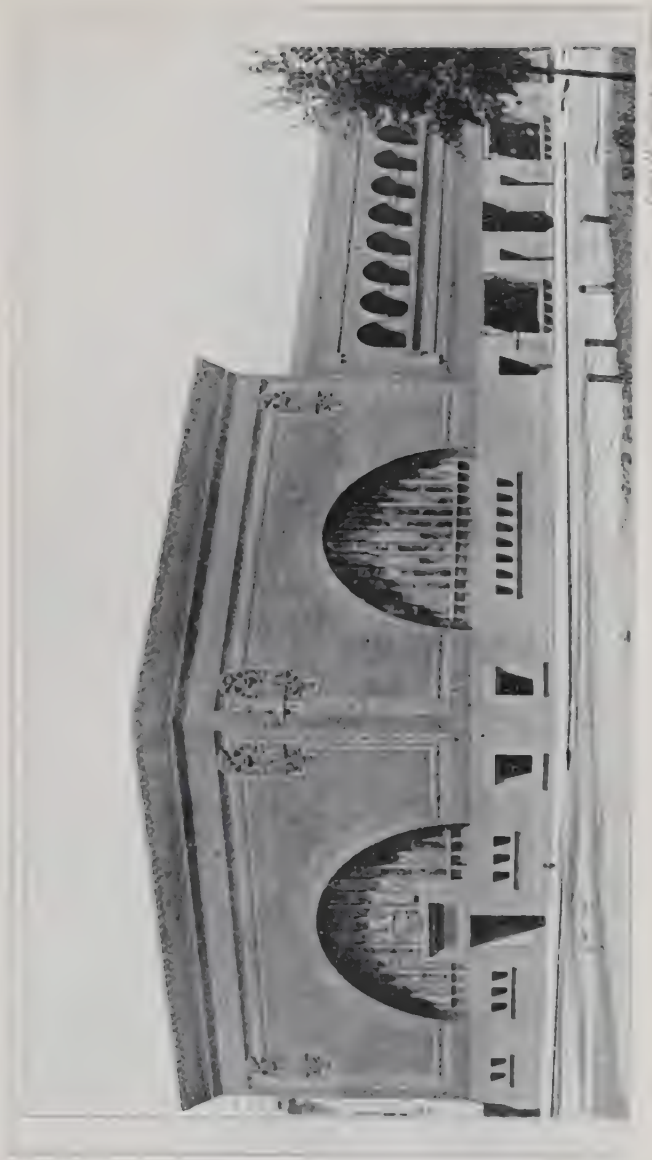
find that no two are alike, and, indeed, that the colour of daylight itself is constantly changing. Apart, however, from its actual colour, a deep shadow will play as definite a part in the appearance of a building as a powerful band of dark paint, and the manipulation of shadows is a vital element in balance. No one can fail to be struck by the cavernous triple shadow in the west front of Peterborough Cathedral, by the intense shadows crowning the Florentine palaces, or by those in the dome of St. Paul's. One of the greatest of our new buildings—the Pensions Office at Acton—depends for its effect upon the powerful horizontal shadow thrown by the cornice. The humblest cottage gains in dignity from the projection of the eaves, and, on the other hand, the deliberate withholding of shadow, as in the parapeted Queen Anne house, with its windows flush with the wall surface, imparts its own character. Play of shadow cannot be ignored, and the best buildings are magnificent if we regard them as tone areas of high light and shadow irrespective of every other quality. A building facing north should be designed for that aspect and not treated as if it could be viewed with the sun shining direct upon it.

In our large towns colour can play but a small part, since, however bright it may be when new, the soot demon paints it a shade darker every year until the surface is soot and nothing else. But even here there is an improvement owing to the extended use of gas and electricity. London in 1880 only enjoyed 17 per cent. of the winter sunshine registered in the country; by 1920 this figure had risen to 45 per cent., still a poor showing, but an improvement. No effort must be spared to abolish soot and smoke fogs altogether, but in the meantime we must not

be debarred from the use of colour even in the structure itself. Glazed bricks and faïence are easily washed, and can be made the medium for introducing variety. Even ordinary brickwork retains its colour in diminishing degree for some fifteen years, and in building in good colours we are laying the foundation for a beautiful city when our grandchildren shall have sent smoke the way of typhus fever. It is a commonplace to say that St. Paul's owes much to the soot which clings to certain parts and is washed off in others, but could we see St. Paul's as it would look were it in the country, with its shade values as Wren designed them, we should realise the absurdity of the pretence that filth enhances beauty.

While the colours united together in a building should harmonise with one another, it is curious how responsive we are to incidental colours; we delight in the pageant of parasols, blazers, and tents at Henley or Lord's, and desire no attempt at harmony, being content with the general sense of gaiety. The same applies to carnivals and street decorations, and much could be done to enliven even suburbia in a responsible but spontaneous mood.

Time deals unevenly with colour, sometimes effacing, sometimes mellowing; and of all the blaze that once adorned the great Greek temples hardly a trace remains. We are consequently prone to visualise the temples in their heyday as gleaming white buildings, just as we imagine our parish churches and cathedral interiors as sombre and grey. In reality they were all a riot of colour, and our present nervousness is founded on a misapprehension if we think we have tradition on our side in eschewing it. To conclude with an illustration derived from the parish churches. The custom in the Middle Ages



NATIONAL FARMERS' BANK, OWATONNA, MINN., U.S.A.

was to build a steep roof, leaving the rafters visible inside, but with an expanse of white plaster showing between each rafter. At a later date, when the roofs became defective, they were repaired and a flat ceiling was fixed concealing the roof. Later still, during the nineteenth century, the flat ceiling was removed and the original roof again exposed, but the white plaster was omitted; hence the intended effect was lost and the roofs became dark caverns. This is cited simply as an instance of how easy it is to misunderstand and lose the intentions of our ancestors, and in so doing to hem ourselves in with colour prohibitions that are neither desirable nor historically justified.

The expanding range of expression in texture and the possibilities of colour evolution are nowhere better illustrated than in the American work of the late Louis H. Sullivan. The plate shows the National Farmers' Bank at Owatonna, Minn., and although the camera is incapable of conveying the beauty of colour, yet the abstract quality of such a conception as this Bank awakens an ideal, not only of form, but of the more sensitive possibilities of surface treatment. It opens up a new country to the designer, and cannot fail to create a receptive sense in those interested in architectural development.

CHAPTER VII

TEACHING ARCHITECTURE

IN national education architecture has been left out in the cold, and has never been admitted into the ordinary school curriculum. Very few general teachers have enough knowledge to be able to teach it, or have studied how it ought to be presented, but if our civilisation is to be adequately expressed in our buildings, architecture must be studied, not only by prospective architects and as a hobby for the few, but by everybody as a part of general education. Thus, the course of training in the elements of architecture should be the same for the layman as for the future professional. Only by such a universal course of training can an educated public opinion be created, one that will induce each individual to take his share in architecture by recognising what is good, instead of accepting a substitute ready-made. Admittedly the power of education lies less in the virtue of the subject to be acquired, than in the formative qualities gained in the mastery, and those anxious to introduce architecture into general education have, therefore, first to prove the cultural value of their subject. It should not be difficult to convince schoolmasters and parents that, as a contribution to culture, architecture is equal to mathematics and science, and that at the university stage classical architecture should rank with classical literature.

The course that would appear most constructive

is one of progressive study, beginning at the elementary school stage, and carrying through into the universities. As an elementary school subject it could well be introduced once a week, and presented in the only manner which is easily comprehensible to children—through handling solids and learning their properties, as well as studying the parts played by their shapes in architectural development. Æsthetic appreciation of a complex work is not possible to the average elementary school child, and even in secondary education is better postponed until a foundation has been laid for it. The child must be approached through the first circle of art. Abstract æsthetics, academic detail, and the elements of technical draughtsmanship, are subjects for higher education, and should be left till that stage is attained, while professional specialisation and instruction in creative design can only be dealt with satisfactorily in architectural schools, whether independent or attached to a university.

Let us begin with the child under fourteen, and see whether we can make him receptive. We may start by telling him that architecture concerns beautiful buildings, and even show him lantern slides in illustration; but is this going to take him anywhere? Is it going to make him keen to know more? Unless we are persuaded that it will whet his appetite we must approach him from another direction, and try for a response by starting from the other end. Let us avoid any insistence upon beauty, or the finished thing, and begin our lesson by taking something solid out of a box and making the child wonder. "Something solid" is an architectural foundation, and in grasping solidity we have gained an unconscious step that will not lead our pupil

hereafter to think of architecture in terms of paper. We will unpack and show our class half a dozen bricks, and, because children cannot look without handling, pass the bricks round. We will show how they differ, explain how they are made, used, and coursed, and at the end of the lesson ask each child to distinguish between the sand-faced, machine-moulded, wire-cut, and rubbed bricks; in this way we can encourage an appreciation, even if partly unconscious, of colour and texture. We shall have given our pupils something to notice and something to recognise every time they pass a brick wall. We shall have helped them really to see, instead of confusing them with something too complicated for them to translate from eye to brain. If we take a party of boys into St. Paul's Cathedral or Westminster Abbey for the purpose of admiring the architecture, we shall leave them mistaking size, elaboration, darkness, and columns, for symbols of beauty; in fact, just in that mental condition to make them think Frascati's "ripping." Visits to great buildings such as these create an emotional stimulus in a susceptible child that may lead to appreciation, but undirected appreciation will not form taste. After considering bricks, we can wonder about the roof—and, if possible, climb and look at one—anyhow, let the children handle some tiles and slates and see how diverse these can be, discussing these materials in the same way that we discussed the brick; let them hear how other men made and handled them in the past. They will then begin to notice roofs. The same applies to windows, stairs, fireplaces, and chimneys; to their factors of shape, material, history, and function.

Nothing is more misleading than the delusion that

children naturally possess taste. They may have preferences, and many children are susceptible to the dramatic and emotional appeals of colour, sound, and still more rarely, shape; but with the rare exception of genius or freak precocity, the greater the susceptibility the worse the taste. The normal child with what we call good taste is only the copier, and does what he knows his mother admires; an original child of nine will, if left to himself, admire the same objects as an intelligent savage. The value of colour in simple painting is appreciated sooner than form, but, again, too fastidious a colour sense is not necessarily a bracing quality, though a genuine instinct for composition and a decorative feeling often show themselves quite early, probably because composition and decoration are tinged with dramatic significance, and drama is, as we have seen in the first chapter, a very primitive force.

One of the difficulties in sketching out a special subject course lies in the existence of water-tight divisions between the different subjects taught in a school. These divisions are breaking down, and in a progressive syllabus the courses which are mutually helpful are purposely related. Thus, where it is known that the elements of æsthetics are being taught constructively, as part of the drawing and colour lesson, the architectural teacher would reap the advantage. Line and colour follow definite principles from which æsthetics may emerge, and any architectural teacher would infinitely prefer to deal with children who were learning, say, Carpenter's* colour circle, and some definite principles of elementary proportion and line, than with a class accustomed to faithful reproductions of leaves and daisies.

* "Colour," by H. Barrett Carpenter, School of Art, Rochdale.

Children are peculiarly susceptible to colour, and are always interested in the mixing of colours and experimenting with effects. The child will readily learn that the rainbow, or visible solar spectrum, starts with the red and passes with shortening wavelengths through orange, yellow, green, and blue, to end with violet. Although the properties of coloured light and pigments are very different, yet if we start with the three primary pigment colours—red, yellow, and blue, and place these as wedges at equidistant points round a circle, we find that if we mix the neighbours they will merge and form three intermediate colours; these, with the originals, will form the sequence—red, orange, yellow, green, blue, violet, and so back to red. The “colour circle” is thus the spectrum returned on itself, and is capable of further subdivision—red, red-orange, orange-red, orange, orange-yellow, and so on. The colours that contrast best are found to be at opposite poles of the circle—red and green, yellow and violet, blue and orange; half the circle is occupied by the “warm” range, red-orange-yellow, and half by the “cool” green-blue-violet. We have seen that, in the spectrum band, the red and the violet are at the extreme ends, and that there is a physical connection between the red end and warmth is clear when we consider that objects are luminous at red heat and then become orange, and that the actual heat rays take their place in the spectrum after we have passed beyond the limits of vision at the red end. In mixing pigments the necessity of identifying the truest primary tones before a colour circle can be adequately developed is a valuable exercise, leading to quickened colour perception and discrimination.

If such instruction in principles is not being given

elsewhere, then it will have to be introduced boldly as a natural factor of architecture applied to the simplest building forms. Although it may not yet be advisable to stress æsthetic appreciation, nevertheless the elements that compose it should not be ignored from the outset.

If, then, we agree to limit early teaching to the grammar of building in solid terms, and "to the elements of line and colour, we shall have started the power of observation from which appreciation may spring. In modern musical training the child is taught to listen, to like, and, perhaps, to do; the same stages apply to building. There could be nothing in such a simple course of "solid" lessons that any teacher could not master, the historical value would be obvious, and a couple of suggestive textbooks would cover the whole field.

With a child of over fourteen we have a more complicated problem, because the emotional phase reaches a new and more acute stage; criticism is awakened, and choice has begun to count. Assuming that the course is progressive, and that our pupils are already familiar with the commonplaces of building, let us develop the principle and further discuss the simplest combinations that make for beauty. We can return to our brick and exhibit its possibilities in the mass, noting how a good brick wall glows in the sun, and the effect of shadows and openings; we can study concrete, and the opportunities for effective wall colour-wash; we can watch a blacksmith forge a wrought-iron bar; we should find out what other work our pupils are doing in other classes, and encourage the use of primitive handicrafts. We can then observe the proportions that give distinction to a plain object like a door or a chimney-stack; but,

above all, we must never forget that we cannot ourselves admire the complex until we have learnt to recognise the simple, a task by no means so simple as it sounds. Let us still be shy of expeditions to old buildings, though these have their place; rather let us take a walk and play at "spotting" what is good around us. This, of course, implies black-balling the bad too, since destructive criticism is the beginning of judgment. Healthy children shun the abnormal, and the sooner that they observe and react against bad work the better.

Consider the effect on the mentality of children living in such surroundings as those at Welwyn, illustrated opposite. The top photograph shows an open-air elementary school built of concrete blocks and the cheapest materials, carefully designed to produce beauty and harmony; the other photograph illustrates a modern "village green," architecturally comparable to the best that our forefathers could do, but greatly superior in accommodation and equipment. It takes no great imaginative power to understand the influence of such pleasant and inspiring surroundings upon the moral and physical well-being of the children.

A secondary school class should be able to recognise the distinguishing features or "styles" of the great architectural periods, and have learnt something of the men and influences that produced them. There are probably some lay teachers of sufficient architectural culture to undertake such a course, but more might be attempted on the lines adopted at Bristol, where the Royal West of England Academy School of Architecture lends its students to give special addresses to the pupils in secondary schools. If the educational world could be convinced of the



WELWYN GARDEN CITY : OPEN-AIR SCHOOL.



Louis de Soissons, Architect.

WELWYN GARDEN CITY : GENERAL VIEW.

advantage to be gained by allotting even an occasional hour for architectural study, there would be no trouble in securing the right teachers from the profession. The young architect is rarely overworked, and candidates for this attractive mission should be many. The real obstruction lies, of course, in the cast-iron requirements of school curriculum, and the subsequent examination that determines the scope of education. More and more, however, a widening is to be seen, and the value of culture is increasingly appreciated by teachers. At a certain London County Council elementary school sixty-four copies of *The Children's Newspaper* are taken in weekly on the boys' side (only five, curiously enough, on the girls'). Anyone familiar with this excellent little journal and knowing how much space it devotes to architectural subjects will applaud the good sense of the head master in referring to it for class work.

Higher education, as we now understand it, is not restricted to a university course. Roughly speaking, it begins where secondary education ends, at the age of sixteen; thus the senior forms at public schools are included within its scope. So far architecture has only received the most cursory treatment at the public schools, and when recognised at all, it has been associated either with classical and historical works, or, at the more practical "modern" schools, as a branch of engineering and a vehicle for technical draughtsmanship. Excellent courses have been given by the University Extension movement, as much supported by cultivated older people as by the young, but there has not so far been a concerted advance by the architectural authorities, nor have we heard of any appeal from the educational world. Who, then, is to take the first step, and what

ought that step to be? It would probably astonish many architects to hear that their subject was one of the very few unrepresented at the Conference of Educational Associations of 1925. Among the fifty-three affiliated associations, Music appeared four times; "Art," Painting, Drama, Woodcraft, Handicraft, were all adequately represented by members from London and the provinces, but, as no invitation to join was issued to any educational body concerned with architecture, the subject was entirely unrepresented at the conference; neither was it found among those scheduled for discussion.

How comes it that the educational authorities did not approach their fellows in architecture? It is difficult to credit that such overtures, if made, would not have been well received. The explanation would appear to be that architecture is still considered technical, and not cultural. If this be so, it would probably help to avert future neglect if the architectural bodies would make it clear that they would like to join, and also show that they are not only interested in the specialised education of architects, but are also anxious to assist in the inculcation of architectural principles as part of the training of an educated man. If such an offer were once accepted by the educational world, and architecture admitted as a school subject, those on whom the responsibility for its development might fall would, we can have no doubt, be equal to their opportunity. Higher education possesses so many complexities that it would be rash to make any but the most tentative suggestions as to the lines that might be adopted, and of the machinery desirable to carry out the proposal. It might well include a certain amount of sketching, and possibly a little measuring up, with

the amount of technical draughtsmanship requisite to reproduce the building on paper, but the foundation of such a course must, by its nature, be academic, though of such a kind that the imagination is aroused. The sense of relationships, so curiously absent in a child, is acute in a young man or woman, and should be called into play: simple forms and simple influences must be shown working together and producing complex results, and the power of repetition and the reaction of contrast suggested. Problems in æsthetics* will become as interesting as problems in construction, the pitfall of the rule of thumb will be exposed, and the study of architecture made the most valuable vehicle for artistic understanding and selection. Courses of architectural lectures in higher education should be provocative as well as scholarly, and modern ideals or fallacies freely debated. Young people do not want only to imbibe facts, but to fit them into ideas that interest them. There is all the difference between a young and an older audience, between one that wants stimulation and one that prefers instruction, and the two should not be treated in the same spirit.

An excellent technical training already exists in some of our younger universities—London, Liverpool, and Manchester; but at the more placidly academic Oxford, Cambridge, and Trinity College, Dublin, we find no chair of architecture, although at Cambridge it is possible to obtain a certificate in the subject that does not in any way contribute towards obtaining a degree. Possibly the specialised training

* See "The Architecture of Humanism," by Geoffrey Scott (Constable and Co.); also "The Theory of Architecture," by Lionel Budden (R.I.B.A. paper).

provided at the younger universities and the unattached schools of architecture, such as the Architectural Association, would not be suitable for the older universities, whose particular province it is to widen and foster general knowledge. These courses are devised as a technical training for the professional architect, whereas the plea we are discussing is for a cultural architectural training of a less technical kind at Oxford and Cambridge. A thorough technical training, even if it were desirable, is hardly possible at the older universities. There are practical difficulties in obtaining adequate staffs, and, in smaller towns as Oxford and Cambridge, of keeping up the modern system of close co-operation between school and practising architect. There already exist facilities for a definitely professional training elsewhere, and a specialised degree at Oxford and Cambridge would not only fail to attract, but would actively repel the interested layman whose choice might otherwise fall on architecture instead of, say, history or philosophy.

An appropriate untechnical course of architecture at these older universities would probably take the form of academic study with only the minimum of draughtsmanship; and just as a man may take physics as one of his "preliminary subjects" without wishing ever to become a physicist, so should architecture claim its place among those subjects that intelligent men like to understand and select for study. The limitations of the university outlook have been so aptly expressed by C. and A. Williams-Ellis* that the passage is worth quoting: "A visit to almost any centre of non-collegiate intellectual activity will certainly make the enthusiast realise that as yet

* "The Pleasures of Architecture" (Jonathan Cape, Ltd., 1924).

architectural sensibility plays a very small part in the lives of people of universally praised culture. Take Boar's Hill, near Oxford, for instance, which was, and indeed is, a Mount Helicon. There we may see poets and philosophers innocently housed in the jerry builder's most hilarious efforts. Variegated shrubs, highly varnished rustic summer-houses, conservatories, fancy barge-boards and cast-iron ridging, and all the paraphernalia of a suburban lay-out here make a little Peckham. But the intellectual flower of the country has noticed nothing." There live our cultural guides, knowing all about Chaldæan, Thucydides, and Hymenoptera, proud of their college buildings, but not perceiving their own surroundings !

An academic understanding of architecture, ancient and modern, would be helpful to the clergyman and scholar, and if business men and politicians included it among their other attainments they would add materially to their value as members of society.

It may be objected that such an introduction to architectural interest would lead to an embarrassing addition of professional recruits, who would be tempted to go on to a full technical course elsewhere. This might be so, but, if properly presented, let us hope that the light course proposed would also lead to fewer amateurs doing their own work. There would be ample scope for all architects if the layman would only realise that he is not himself competent to undertake design.

The educational strain is a very real one to parents, and there are many who would welcome the opportunity of sending their sons and daughters to one of the older universities, before taking up an architectural career, if they could afford the time and the

expense. The course we have been discussing would form a helpful foundation to subsequent technical training, and the three years would no doubt be taken into account and shorten the subsequent professional probation, probably by two years. For those who can meet the extra financial strain time spent in culture is never wasted; a year can often be taken off the public school course, and if the boy is ready for it, be better spent at a university. Architecture needs scholars and the scholarly influence, but what many parents feel, and perhaps resent, is the apparent lack of co-operation and interest between university and independent architectural school, which at present renders that scholarship the less available.

The old universities exist not only to encourage learning, but to bring together those who are making diverse studies, and the title "Bachelor of Arts" persists as a misnomer when the faculty excludes every branch of æsthetics. Among the list of professorships, we find Papyrology, Chinese, Animal Pathology, and Sanskrit, but nothing about architecture. These ancient universities vaguely imply that they might be prepared to smile upon a chair of architecture if someone would endow it, but they ought to appreciate that more than smiles is required of them, since nothing could better enrich the contribution of the two great English seats of learning than the study of the art to which they owe so much. Architecture depends for its life on cultivated opinion; it has withered because it has been segregated as a technical or archæological side-issue to the extent of obtaining less recognition than Papyrology. If at Oxford, Cambridge, and Dublin, elementary architecture could be studied as one of the subjects

for a pass degree, a powerful influence on public opinion would be excited.

A naval captain once remarked that if you want to hear true blue nautical "shop" you should listen to an army man who goes in for yachting. The ardent amateur is always the complete devotee, but his present attitude towards architecture has its drawbacks; he scares other laymen; he "idolises personalities; he radiates the impression that architecture is an expensive and specialised mystery, and that those who are to understand it must also understand profound philosophical speculations about "origins," "form," and "the battle of the styles." This state of grace is not possible for the majority of our fellow-beings, and, in addressing ourselves to them, we must recognise this limitation and give them something upon which they themselves can build. To make the child receptive we must begin with the brick and end with the tower; with the man who has already begun with the tower we must accept the situation and work back to the brick and the stone. Most people are awed by the mighty mass of Durham Cathedral, but very few can appreciate a garden wall, and yet, until you can really admire a good wall you will not see the full beauty of Durham.

But whether appreciation is aroused through imagination discovering the beginnings, or whether the beginnings themselves lead on to imagination, understanding is not born grown-up; if once we realise this peculiarity we may get back to the corporate genius of the great architectural periods.

CHAPTER VIII

BAD HABITS

THE power of habit can hardly be over-estimated, and its influence upon architecture is tremendous. We are in every direction the creatures of habit, and anyone who looks around must conclude that most of the architectural habits bequeathed by the nineteenth century were bad ones. We have seen that a general movement is taking place in the architectural world in the direction of simplicity, aiming at the sensational and dramatic rather than the emotional or intellectual in architecture. The public, accustomed to the over-decorated and the pretentious, will without question criticise much of the new work illustrated here as being "too plain," or even dull and uninteresting, and this criticism will be aimed more especially at the small house. The public should, however, understand that architects, if they are employed in future on housing work, will have to adapt themselves to the views of local authorities and other clients who will often economise to the last penny and shortsightedly sacrifice architectural amenities of far greater value than their cost; the resultant work will, therefore, often be plainer than even the architect desires. We must not expect miracles, and we are deluding ourselves if we imagine that we can suddenly produce minor work on a general scale architecturally comparable to the individual craft work of the old English village.

We ought not to expect too much, but should encourage the improvement that is already visible. When we consider that the country has a building habit of a hundred years' standing to unlearn before it can start on a sound foundation, we shall be less ready to condemn the plain practicality of much modern work. The baldest of concrete houses is a base upon which something architecturally valuable may be founded, and it would be disastrous to spread the impression that the Edwardian villa and the bald concrete cottage are equally to be condemned because neither comes up to the old English tradition. We must be definite in the distinction between the two: it is that the villa bears no possibility of redemption, but that the honest, if dull, utilitarian house, which embodies the views of so many local authorities, may lead gradually to a finer conception of design and craftsmanship, if people can only be interested in its development. Little encouragement can be expected at present from politicians, who, as a class, are especially inept. True, they have given us a Commission of Fine Arts. Dr. Addison gave a lead in his housing scheme, and the House of Lords contains such men as Lord Curzon, Lord Crawford, and Lord Newton, but even now there must be very few in the House of Commons who know or care one pin about the subject.

It is rare for the ordinary householder or occupier to have personal dealings with an architect. His professional guide in house selection is the house agent. It is therefore a serious misfortune that this efficient professional man has limited his activities to a knowledge of amenities and legal details, while all the time suffering from a complacent and abysmal ignorance of architecture. The house that is

described as "A Highly Desirable and Most Artistic Residence, Tudor Style, Three Years Old," is really an undesirable monstrosity. The house agent does not regard architecture as part of his job, when it surely ought to be part of his job, just as it should not be entirely unfamiliar country to the engineer and the speculative builder. This is not to say that members of these callings ought themselves to dabble in architectural work (which they already do to excess), but they ought to appreciate and recognise it, enough at least to render them aware of their limitations. An appreciation of Shakespeare is part of the equipment of an educated man, but this does not imply that he ought to write plays himself. The course of self-training necessary to induce an understanding of architecture is a hard one, and leads naturally to a realisation that the practice of architectural design requires whole-time training, a point that the prevailing ignorance has obscured. The absolute necessity of serious concentration and study is not appreciated outside the profession and a small circle of interested amateurs. Is it too much to hope that some day when the house agent is beginning to write the word "desirable" he will pause, turn it up in the dictionary, and then look with an architectural eye at the structure he is supposed to be describing?

Admittedly it is difficult to draw an exact line between the good and the indifferent or bad in any art, but there is no difficulty in arriving at broad and perfectly definite conclusions which admit of a wide range in selection. Suppose that one were to tell a musician that one preferred the music of "Hullo, London!" to that of "The Magic Flute," he could with difficulty be persuaded that one had

a right to hold this view, but one could not satisfy him that there was no right or wrong in the choice, and that it was all a matter of taste. One would only be confessing ignorance of music. With architecture it is the same. It will further be argued that "fashions change," and that what one generation likes the next will disdain; that a love of Wagner will give place to a worship of Bach. This, of course, is true, but it only shows that different generations see works of art from different angles, and taste does not only change; it evolves; but greatness must be there for the responsible opinion of any generation to worship any given phase of art.

The public must learn that architecture includes pigstyes and blank walls as well as churches and monuments, and concerns the work of the present day as vitally as that of past ages; that the great works of the past are there for us to revere, but that it falls upon us to mould the future; and, finally, that if we build pretentious and ugly buildings our descendants will suffer, and conclude that we must have been pretentious and ugly people. Our work during the past eighty years can be recognised, not by any definite style,* but by its attempts at emphasising other styles. We substituted histrionics for the dramatic, and having no national expression

* If corroboration is required, turn to p. 428 of *Whitaker's Almanack*, 1924, where the periods of English architecture are tabulated, beginning with Ancient British, before the landing of Julius Cæsar. After tabulating a perfectly definite sequence of characteristic architectural periods or styles, extending over nearly 1900 years, the table ends at 1830, with the announcement that modern architecture from that date to the present day represents "The Age of Revivals." Is it too much to hope that we are nearing the close of a period that might well be called "The Age of Bankruptcy"?

we loudly misquoted others. The present tendency is to avoid all repetition of historic styles. It is recognised that there should at the present only be one style—that of the present. To ask a man in what style he intends to build a church, a house, or a cinema, is as absurd as to ask him in what “period” he intends to dress for to-night’s bridge party, or in what style his motor-car will be designed. The modern car has achieved beauty through sheer necessity, coupled (and this is an essential point) with a real, possibly unconscious, eye for line on the part of the designer. Hence our motor-cars have a distinctive style expressive of to-day, and are not borrowed haphazard, like architecture, from the days of King John, Cleopatra, or George II. Past styles must profoundly influence present-day work, and it is right and proper that this should be so; it is the conscious imitation of the work of a past generation that robs architecture of any value of its own. Let us borrow anything we please from whence we please, but let us judge of the assembled result solely from the standpoint of to-day. Practical efficiency alone will not suffice, any more than it alone will produce a good-looking human being. There must be a spirit behind, but it must be the spirit of the twentieth century.

Let us now consider two of the most commonplace of everyday objects—the gasometer and the tombstone. The gasometer is efficiency itself, but there can be no reason why, when it is in the country, it should stand stark as the embodiment of sordid commerce. The gas industry is outstanding in its enterprise, and it has, in the gasometer, an excellent opportunity of giving a lead in the art of concealing ugliness. The squat and dingy cylinder that arrests

the eye in a landscape would disappear if it were camouflaged in check patterns, as it would have been treated during the war had it been desirable to conceal it from the enemy. If with a coat of paint we can obliterate it when we wish to preserve it during war-time, why can we not do the same to prevent it from becoming an outrage in a landscape? The modern tombstone is more unpleasing because it is conscious. The white marble suburban headstone might stand symbolically over the grave of beauty itself. Tombstones are ordered out of trade catalogues, like seeds, and the modern cemetery has become a byword. Is it altogether an adequate demonstration of respect to select as a monument No. 2A on page 8, with text No. 17 in lettering No. 5? If each graveyard had even one good new memorial this might act as a missionary to the re-introduction of good taste stamped in English stone in the English cemetery. Gothic monuments and brasses are a delight to the eye both in lettering and design, and are in perfect keeping with the architecture of the churches with which they are associated. To the medieval mind no detail was too small to be worthy of all the attention and skill that could be lavished upon it. Our present inanities are the outcome of cheap printing and easy communication, resulting in the circular and the catalogue, with the consequent disappearance of local skill in design.

It is unfortunately not only in small things that the loss of local skill, interest, and initiative is felt. We suffer most acutely from its disappearance in such towns as Cirencester, where the dignified beauty of the Cotswold stone was giving place, even before the war, to rows of brick houses conceived on the most repellent of suburban lines. Local tradition

has everywhere been submerged through the flood-gates opened by transport facilities, when there was nothing worthy to take its place. Thus the Cotswold stone, the Sussex brick, the Devonshire cob, the East Anglian flint, and even—as we shall see later—the Irish cement and slate, are slowly but surely giving place to the suburban type that has overrun the country like the brown rat, ravaging everything before it. We cannot move the clock back and deliberately revert to purely local tradition; the suburban villa type can only be ousted by the substitution of a national type—one that will make its appeal through a gradually awakened sense of beauty and that will contain in itself ample room for all the local tradition and talent that is available or that can be reintroduced.

If this country is to be made fit to hold a race of responsible beings we must break with our bad habits and reinstate architecture, even when on the humblest scale, as an art, simple yet fit to be admired and to express its spiritual message to each individual.

CHAPTER IX

THE ARCHITECT

IN order to follow the trend of modern architecture it is necessary to realise something of what is going on behind the scenes in the architectural profession, because, although the architect cannot succeed in infusing architectural life into our buildings without the layman's aid, still less can the layman do anything by himself. The architect is unlike the musician, the painter, and the poet, in that his conceptions cannot take shape at all without the help of a client and of the client's purse. This difference is fundamental, for it need hardly be said that if a client pays the piper he is too often going to call the tune in design as well as in practical considerations. Mr. H. S. Goodhart-Rendel in his 1924 Presidential Address at the Architectural Association* went to the root of this difficulty: "A painter or a writer can show to the prospective purchaser the goods he offers for sale. The architect can only show a drawing of them, which the prospective purchaser is apt to regard with suspicion, not perhaps unjustifiably. Moreover, very few people who employ an architect expect or desire from him a work of art, or indeed have any conception of what a work of art in architecture is. They think that they know what they want already, and would

* "Yesterday and To-morrow" (*The Architectural Association Journal*, November, 1924).

like best to obtain it directly from a builder, afterwards ordering the decorative features *à la carte* from a furnishing firm. They employ an architect only to guarantee the safety of the structure and of the drains, and to see that the builder does not charge too much. They bow to the necessity of his employment, but regret it.

“Now it is to such unwilling patrons as these that most of us owe three-quarters of our chances of doing anything at all. It is therefore not surprising that there should be heard, as there has recently been, a demand from architects for the architectural education of the public. No corresponding demand to be architecturally educated has yet been heard from the public, but we hope that it may come in time. If and when it comes the problem will arise of who is to do the teaching. This ought, of course, to be the function of architects by deeds rather than of critics by words. But who is to pay for the instructional buildings, the buildings in advance of public taste? . . . A great number of the buildings of the last half-century that we now believe to be the best ones have been paid for by people entirely indifferent to architectural appearances. Besides these, a few of the very best of all have been built by people of exceptional artistic perception, and have been profitably imitated by others. Such gifted people still exist, but they mostly are too poor now to build anything, and it were vain to hope that any amount of architectural education could appreciably recruit their numbers from among the present holders of wealth. But there are still to-day among those who build—and Heaven be thanked for it!—many people who have no taste whatever, and who do not care two straws

what their building looks like provided it serve its purpose. For these the architect can do his best work, stimulated by his employer in his pursuit of efficiency, and unhampered by him in his pursuit of beauty. For these honest and blessed Philistines the architect can build the models which persons of taste will be as glad to imitate as they would have been unwilling to inaugurate."

In a country such as ours, which verges upon bankruptcy in artistic ideals, it is certainly of little use to try to instil real appreciation into the uneducated adult population; it can only learn by being introduced gradually to a new habit. But the opportunity the architect can seize through the apathy of a patron can and should be strongly reinforced by the educated layman, even if the buildings at his command are small and unpretentious.

A qualified young architect in pre-war days seldom escaped from a regret that with all the technical education at his disposal and the knowledge that he had assimilated he was unlikely to be commissioned to apply either to the common run of small houses and shops. In the years immediately preceding the war house design was well taught, and he was capable of producing something satisfactory if he were asked to design a shop or a block of cottages for a client who was eccentric enough to turn to him; but for practical purposes he never was consulted, and no one even thought of consulting him, and we are only now fully realising what the consequent divorce between building and architecture has meant to this country.

This neglect is to a great extent the architect's own fault, for, without entering into any discussion

as to the quality of his past work, we may say that he has surrounded himself with a ringed fence of technicalities—a fence that soon grew so high that he and the public lost sight of each other. He has over-valued pure æsthetics—"the third circle"—and promoted a culture that lost touch with everyday things. Even the word "architecture" is long and cumbersome, and it is now understood to stand for something cumbersome; to denote a knowledge of the correct use of the classical orders, of ovolo, scotia, and cavetto mouldings, ornamental *motifs*, fan vaulting, arcades and pediments, poppy heads and crocketed canopies, all of which terms present a bewildering array fatal to a layman's healthy curiosity. The layman is frightened of architecture as he is frightened of Einstein. If he only understood how badly his help is needed, how simple are the only elements he need grasp, he would surely come forward and help to sweep away much that is vile and sordid in our towns and suburbs, and replace it with the clean and elemental. Some means must be found whereby every new building will be subjected to a searching fire of criticism, not only as to its individual merits, but as to how far it is appropriate to its surroundings.

The question then arises as to who is to do the criticising. The new architecture is still in splints, and it is certain that the duty of looking after it, even when kindness entails a certain amount of cruelty, must fall upon the shoulders of the architect. If the architect were an artist pure and simple, it would be easy enough to obtain mordant criticism from this source; the difficulty lies in the architect's double personality, for his artistic Jekyll is always associated with a professional Hyde, and it is well known

that professional men may not see anything but haloes on each other's heads. The time has come for the architect to make up his mind once and for all which he is going to be. If he elects to be an artist, half the world will lose faith in him, for how could an artist understand about drains and gas coppers? If he decides on the professional man, the other half will have no use for him, for how can one profitably discuss matters of art with a man who admittedly is not an artist? The present tendency is for the architect to regard himself more and more as an artist, and it is his business to make the public realise that artists are not necessarily fools when it comes to practical considerations affecting their art. On the contrary, it has always been an essential in great artists that they should know the practical limitations of the medium they were called upon to handle, whether the chemical properties of pigments, the mechanical limitations of musical instruments, or the peculiarities of brick and stone.

Architects in reality have little choice; they have only one monopoly—the art of architecture. Every branch of their work that might be described as “professional” can be done by someone else—the builder, engineer, surveyor, lawyer, and the various technical experts. While everyone recognises that there is a difference between “building” and “architecture,” few perceive that it is precisely the same difference as that between the architect as a professional man and the architect as an artist. If architects dissipate their energy and treat, for example, housing as though they were as much concerned with the social as with the architectural side, the architecture will still get left out, while the

social side,* which is now in no danger of oblivion, will be over-stressed. The same applies to every other branch of building; people will always build, but they have at present only the feeblest incentive towards building architecturally or appropriately. Happily, the incentive is growing. The Press devotes more attention to the subject than ever before. The names of Mr. J. C. Squire and the late Clutton Brock are as familiar to architects as to their fellow-writers. While from the ranks of the profession, Professors Lethaby, Reilly, Adshead, and Abercrombie, Mr. A. R. Powys, and Mr. Raymond Unwin—to mention only a few—have done striking propaganda work. They appeal primarily as reforming artists, and that they should be invited to contribute shows that their message is appreciated.

If the architect stands boldly as an artist, is there any danger, as has been suggested, that we shall suffer from the fads and futurisms of modern art? If this were inevitable the architect should certainly renounce all claim to art and take his place with the dentist and the solicitor. It is idle to pretend that architecture is immune from the bizarre and the grotesque; we have only to cite the Einstein tower at Potsdam, designed by Eric Mendelsohn as an observatory for research work in connection with the Einstein theory, to find a structure shouting its symbolical message with assertive incoherence. It appears as a gaunt and curvilinear tower, with a base resembling a crazy concrete battleship, apparently independent of geometry and its derivatives. Its

* The following works deal exhaustively with the social side of housing: "Housing," by Harry Barnes (Ernest Benn, Ltd., 1924); "The National Housing Manual," by Henry R. Aldridge (The National Housing and Town Planning Council, 1923).

“purpose,” we may take it, is to express the spirit of Einstein’s theory. The expression may reflect the popular imagination of that theory, but it is not one that could be accepted by the world of science. Einstein’s suggestions appear to complicate because they require us to jettison previous acceptances; actually his attempt is to produce the simplest possible theory of the universe as he finds it, and this involves relinquishing axioms which do not fit, but which we have been brought up to believe in. Instead of using a structure of revolutionary simplicity, the architect has designed a building of excessive complexity, not so difficult to understand as it must have been complicated to build. Hence, it exists, a travesty of Einstein’s actual contribution and a monument to complication and bewilderment.

But this tower is only one example among many eccentricities in Germany and in Northern Europe. Over-emphasis of one aspect is a characteristic of elemental art, and, despite its extravagance, it is the type of outcrop that one would expect to find at a time of revival. The baroque, on the other hand, as exemplified in the amazing new Temple at Barcelona, tends to over-emphasise every detail, and is as a rule a symptom of exhaustion. German architecture has always shown a leaning towards the colossal, and the primitive—what one might call the “Easter Island *motif*”—there finds suitable soil. It has spread in a measure over the frontier to Finland and Holland, but in this country its echo is faint and unlikely to lead to anything violent.

Architecture such as this is best countered by a sense of humour, and as a people we are too self-conscious to make ourselves butts for jests at our expense in anything as permanent as architecture.

The change over from the practical man to the crazy artist would be too sudden to be possible here. We may, perhaps, thank the profession of architecture in England for our immunity from an excess of individualism, and in pleading for a greater insistence upon the art side, one is really asking for that balance between the two that will ensure us against artistic freaks on the one hand, and irresponsible commercialism on the other.

During the nineteenth century the bulk of practising architects, especially in the provinces, were professional men first; they surveyed, administered, and sold property; they were surveyors rather than architects, and their work remains a witness to their limitations. Architecture was protected as a calling, not as an art, and qualification was roughly measured by the amount of work carried out. There were also, of course, artists who predominated in special work, and who were often artists to the extent of neglecting the mundane side, but they kept the torch burning, and the profession to-day owes much to their influence and courage. We have now the anomaly that commerce is inviting the co-operation of the young architect in design, while at the same time there is a tendency in responsible architectural opinion to frown on commerce and to stress architecture as an art. The question of how far the individual architect should be incorporated into a commercial firm is one that will be very active in the future, and will require careful handling; but if we had faith, as we ought to have, that those architects who made the venture would place their art first, architecture and the community would certainly benefit by the departure. There can be no adequate protection against the self-interested in

any walk of life, and safeguards are apt to trip the wrong people. Supposing a capable young architect were employed by a firm of monumental stonemasons, the direct result would be that we should get good monuments instead of bad ones, and the public taste would be raised. The professional outlet that dealt in property and neglected art was officially safe; the new commercial zeal that asks for art remains outside, but it is knocking at the door.

There exists to-day a fine internationalism in the arts and sciences, and in architecture this is intensified by the growth of the school system, the schools being all affiliated to the central body, the Royal Institute of British Architects. The student of thirty years ago was generally articled to a practising architect, probably for two years, and he then went on to be an improver, for perhaps a year, in another office. The course of training in the technical architectural schools now extends over five years, and includes six months' experience in an architect's office. The masters at the schools are practising architects who between them represent much of the vigour of progressive thought (four of the buildings illustrated in this book were designed by the heads of architectural schools), and the schools also form social centres where ideas are exchanged and problems discussed. Thus the corporate life of the school permeates the profession and continues to exert its influence on architects in after-life. The friendly exchange of ideas within and between these schools is extended to similar bodies abroad: visits are organised, exhibitions arranged, and an invaluable comparison of ideas and methods results. The influence of a closely co-ordinated profession in many lands can hardly be over-estimated; animated by

new problems in materials and construction, architecture should run no risk of becoming stereotyped. Cliques are bound to appear, and sudden fashions and fancies are a normal phase of development; but it is only through such adventures that taste and judgment are ultimately secured. There is no need to deplore them; on the contrary, they quicken debate, avert stagnation, and generally enrich experience. If the new architecture is ever fully released in England there is little fear of freakish experiment, though experiments, and not always successful experiments, will certainly be made. The tendency towards mass in large works and the boldest use of plain surfaces will evolve its own æsthetic possibilities. The influence of Sweden, romantic and daring, but essentially traditional, is not only inspiring, but restraining to the younger generation.

In turning his back on the claims of stereotyped styles, periods, and ornament, the young architect is for the moment inclined to revel in function and austerity, often accompanied by cynical unemotionalism; this tends, perhaps, to be over-stressed by the student, but the reaction is entirely healthy and, if it were not exaggerated, would not make the impress which this generation needs. How could any body of students pass daily through our rich shopping centres and watch the work in course of erection, generally, be it remembered, from designs twenty years old that were held over during the war, without feeling that we must have a dose of stark simplicity if we are ever to get back to sanity?

The illustration shows a design by a fifth-year student at the Architectural Association, which represents much that is typical of the new move-



Designed by R. E. Enthoven.

STUDENT'S DRAWING : AN HOTEL ON A HEADLAND.

Facing p. 78.

ment. Such work has its especial interest, since it keenly reflects the aspirations of the coming generation; it enjoys the liberty of pure design, and the conditions imposed have not the absolute restriction of actuality. As a result, we get adventures of thought that are eloquent of ideals behind. We can recognise at once that this design relies upon the dramatic quality, while frigidly disclaiming melodrama. The effect is impersonal and aloof; every feature is kept in order, and no latitude is tolerated in pier or window; the side pylons and the tower give the impression that this mass of building intends to dominate the natural features of the headland. We realise that this is not so much an individual creation as a protest against specious attraction, and although, for an hotel, the design is perhaps a little austere, it nevertheless embodies a realistic principle that is only waiting for a general expression, and which is visible in many of the modern buildings illustrated in these pages.

With the post-war school system there has arrived the girl student, and it is of psychological interest to observe how profoundly she differs from the lay feminine reformer, who derides the man-made house, and suggests that architects know and care nothing about domestic amenities. It is impossible to imagine any race of qualified women evolving a new feminist style, and the girl student has, fortunately, been found to express herself more through the exact science of building and construction than through ornament or a multiplicity of "gadgets" as the lay feminine reformer might lead us to expect. In short, the intelligent woman designs on exactly the same principle as the intelligent man, but her influence will profoundly affect other women, since

with a gift for design, a fluent pen, or a silver tongue, she can work wonders in evangelisation, and will tend to lift her art above sex. It is, therefore, in propaganda that her direct influence will first be recognised. Until women generally learn to know what is good and allow people to build well for them, we shall not get worthy houses. Women will always be emotionally sensitive to their immediate surroundings, and if they would take the trouble to understand what is good and insist upon getting it, they would make a contribution to architecture more quickening and important than any innovation they could as individuals introduce in practice.

But the architectural profession, male and female, is powerless to evolve constructive design on a national scale, while the public fails to employ the architect on smaller work, and in larger buildings continues to demand a replica of the past; while the clergy continue to pin their faith to Early English Gothic, the store-keeper to becolumned Italian Renaissance, the restaurant proprietor to Moorish, the caterer to Tudor, the city clerk to Villaresque, and the Government and local authorities countenance designs prepared by the architecturally uneducated.

In this connection it is interesting to quote the views of Vitruvius, writing about 30 B.C., which show that the designing of buildings by unqualified and incompetent persons was prevalent 2,000 years ago. He says: "When, therefore, I see this noble science in the hands of the unlearned and unskilful, of men not only ignorant of architecture, but of everything relating to buildings, I cannot blame proprietors, who, relying on their own intelligence, are their own architects; since, if the business is to be conducted by the unskilful, there is at least more satisfaction in

laying out money at one's own pleasure, rather than at that of another person. No one thinks of practising at home any art (as that of a cobbler or fuller, for instance, or others yet easier), except that of an architect; and that because many who profess the art are not really skilled in it, but are falsely called architects."

The position in England is the same as it was in ancient Rome, since anyone may call himself an architect even if he knows nothing whatever about architecture. It is for this reason that the profession is anxious to obtain registration, in order to safeguard the art and the public from those who falsely call themselves architects. State registration would prevent anyone who had not an architect's training and qualifications from posing as such. The argument most generally urged against this innovation is that "the public interest is not at stake." It is said that the bye-laws are sufficient to save people from being killed by the collapse of the buildings, and to ensure that sanitation is attended to, but as for architecture, beauty, and amenity, these are trifles of insufficient importance for legislation. This attitude is a curious commentary upon our outlook, which sees culture as of no public importance, and can rise no higher than drains, cesspits, and buildings that will not fall down. A much more telling argument urged against the registration of architects is that it would form a trade union in a calling that should be an art, and might go a long way towards finally converting architecture into a profession with all the red tape and enforced etiquette so often associated with closed professions. While the Royal Institute remains in the hands of men of vision, it is argued, everything may go well, but what will happen

when it falls into the hands of a council composed, perhaps, of aged and crusty gentlemen, who could decide to suspend an architect because he had built something they did not like, or because he had advertised himself by writing a signed article in the Press? It is idle to deny that these are real dangers, and even though in theory a man who was suspended, and could consequently no longer describe himself as an architect, could still design buildings, and would certainly write articles, he would nevertheless be heavily handicapped. But the arguments on the other side are far stronger, for one has only to consider the injustice to all parties, and the bad work that results all over the country from incompetent people who parade the alleged fact that they are "architects," to conclude that in a civilised country things should not be allowed to drift on as they are. The difficulties attendant upon registration have been satisfactorily adjusted within the profession, and it now remains for Parliament and country to decide.

Having sketched the recent and more immediate influences that are actuating our new architecture, let us now turn to particular examples that may help us to recognise what is most typical and distinctive.

CHAPTER X

THE HOUSE

THE country house has always been a source of legitimate pride in this country; it is the natural product of its own social standing, and nowhere can the twin traditions of freedom and order be seen to greater advantage. Among those representing the freedom of Gothic we find Penshurst Place and Compton Wynyates on the large scale, and on the smaller scale such houses as Bibury Court, Horham Hall, and Seckford Hall, near Woodbridge, to name a few at random. Peover Hall, near Knutsford, embodies in a rare degree three different styles; it has not only its Tudor wing and main Georgian façade, but it also possesses Cromwellian stables with richly-moulded ceilings. This composition of styles makes an English whole that is almost, if not quite, unique, but not uncharacteristic. The Renaissance, of course, introduced the ideal of classical order, and produced a vast number of houses, large and small, among which Castle Howard, Kedleston Hall, Coleshill, Stowe, and Spenser House, overlooking the Green Park, are prominent.

Although both the above modes of expression have passed away in the architecture of the country house, the principles remain. The classical ideal has come down to us through the Queen Anne and Georgian styles, until in our own day it blossomed afresh in the works of such men as the late Ernest

Newton, R.A., whose designs reflect the full beauty of the earlier work, but possess an added distinction of their own, partly obtained by heavy cornice shadows and the sympathetic treatment of brickwork.

The house near Sutton - Scotney illustrates scholarly beauty in the large house with a complete absence of fuss and egotism. No one could guess that this was not an original creation; actually it represents a recasing and addition to an older house of no particular character, and it shows how quality can be gained even when the architect is not free to start at the beginning. The impression of the façade is Georgian, the lofty block, always less genial than the long plan, with a still plainer wing in the foreground, lending a note of severity only tempered by the deep shadows of the arches. It is typically English and typically sound, from its terraced wall with ornamental piers and its bold quoins, up to the discrete chimney stacks, capped with brick on edge. In such a house the emotional appeal would appear almost neglected were it not for the colour of the brickwork and the play of light upon its walls. Good materials and execution can never pall, and such genuine expressions of unaffected dignity convey a significance that reaches beyond their immediate purpose.

So far we have been dealing with isolated country houses, but the terraced town house will always be with us and demands its appropriate form. Here we shall find it hard to register any very definite architectural advance upon Georgian work. The Georgian type of façade, essentially classical and orderly, was perfectly adapted to express the requirements of its day, and our modern needs so closely resemble



From Across, R. L. T. 1912

HOUSE NEAR SUTTON-SCOTNEY, HAMPSHIRE.

Facing p. 84.

those of our ancestors that we can continue the development of their town architecture almost exactly from the point where they left off. In our new terrace houses of this type the austerity of the structure is constantly qualified by an engaging intimacy in details, reminiscent perhaps of the Regency, but more in the spirit than in any imitation of manner. Balconies, verandahs, outside shutters, and other architectural features break the severity of the main construction, while bold experiments in colour effect avert monotony or dullness. As this new work itself develops into a "period" and the use of new materials and devices becomes familiar, additional ornament, subsidiary or extraneous, will certainly appear, but this will not happen till the period is ready for it, and it is to be hoped not yet on any general scale.

When we arrive at the smaller house we find it dominated by the need for labour-saving amenity which has now developed into the "Model Home." Inasmuch as this is essentially a feminine creation—no man would ever have thought of such a thing, nor would he dare to criticise it—the writer naturally turns to a lady for guidance, and quotes her contribution in full:

"The service difficulty which has made educated women undertake, or at any rate understand, more of housework themselves is a wholesome reaction. In the burst of enthusiasm they have also discovered that men know nothing about amenities, and they have initiated a campaign for interior reform in co-operation, not with the architect, but direct with the tradesman. While no one can deny the unpractical arrangements of the old-fashioned house, it is not reasonable to attribute the lack of convenience to

sex prejudice or ignorance. Men do not like basements, and dislike housemaids. Houses and their 'offices' are the inevitable product of their time for which men and women are equally responsible. If anything, it is the women who are the more blameworthy; ask any house agent, and he will tell you that it is women who adore the villa and crave for its pseudo-emotional appeal. If we are now improving our taste by learning to handle things ourselves, then so much the better, but let us beware the rostrum and begin at home. Architects are still seeking for the fuel-saving closed range that is mistress-and-maid-proof, and anyone who has witnessed the clearing out of the domestic sink waste and beheld the matches, hair combings, apple cores, fragments of floor cloth, and putrefying remains of last year's flower stalks, will decide that women ought not to be allowed to use a waste pipe, but should be presented with a cross between a mincing-machine and a giant python.

"Let us, however, accept the existence of the model cult, and, armed with an order to view, go over one of these ideal 'maisonettes.' Its philosophy is based upon dread of dust and a passion for fittings, and upon the immorality of accumulation. The bedroom contains a bed; otherwise it has no furniture, and, in its awful pristine cleanliness, so closely resembles a public lavatory that one might unconsciously leave a penny tip after washing in the laid-on basin. The various cupboards are fixtures, aggressively so; the dressing-table, also a fixture, slides in or pulls out when required; boots are tightly parked in a boot locker concealed under a window seat. The floor is bare and polished, carpets, of course, being tabu. The angles are rounded. The

door surface is flush. There is no fireplace (really model houses being communally heated). The radiator is painted white, so is the pull-out table; the walls are distempered white; in fact, everything is white except the sheets, which are in crude coloured checks ‘ to break the insipid monotony of tradition.’

“ Next door is the Nursery. The Nursery is peculiarly holy in the Model Home, and the details must be familiar to any visitor of recent exhibitions, where the charming notions of our young princesses are translated by enterprising tradesmen. There is an art frieze, no wall paper, no pictures, no corners, no microbes, and no character. We carry away the impression of acres of cork carpet, and a round table with one bowl of roses . . . the nursery we remember best, had nothing model about it, it was a shameless hotch-potch; its pictures were the beloved presentations of the Christmas numbers; it had a patterned carpet (Brussels), invaluable to a generation that played marbles, a scrap screen, a solid square table with an ink-stained chenille cloth fringed with coloured bobbles, and enthroned on the table was the family sewing machine. Everybody came into that nursery when they wanted anything done; extra people slept in it: it must have been full of microbes, but good ones happily were included in the party.

“ We will not dwell in the sitting-rooms; they are ingenious; nearly every article of the few pieces of furniture can be used for three or four other purposes besides the one to which we are accustomed, and the scheme is either quite without colour or jazzingly full of it. Instead, let us hurry on, and, reverently removing our shoes, explore the kitchen. Here it is that the philosophy of dirtphobia achieves its

logical triumph. Everything gleams with the high light of spotless efficiency. Food in its crude state, or a cook, would be an anachronism. Note the absence of the familiar centre table; instead there is space and a side pull-out. There are no beloved drawers containing hatpins, Mrs. Beeton, and the screw of the mincing machine; in their place are glazed, dustproof shelves, behind which are paraded the aluminium non-drip tea-pot, the hay-box, mysterious chafing pans, and the other burnished surgical instruments of refined no-handed cookery. Awed by the experience of our visit we return home, sit by the cat on the woolly hearthrug, and think over what we have seen.

“ In theory every feature of these carefully devised homes is logical, often comely, and sometimes sensible, but the reiteration irritates and provokes the ordinary illogical human. For, even after making every allowance for the service difficulty, is there an immediate need to Americanise the details of our surroundings? Home to us here still means accumulations, generally traditional ones; it means compromise; it expresses the varying tastes, sexes, hobbies, and moods of a family, and it cannot do all this and remain surgically clean. Probably the present aseptic house frenzy is a reaction from the fussy war of exhaustion which so many English housewives unsuccessfully wage against perfectly inoffensive dust. If but a little of that zeal were used to reinforce the campaign against the vile dirt of smoke pollution, the gain to society would be immeasurably great, and years of wasted energy would be saved. Let us preserve our homes as inherited, evolving them gently as the need arises, but when we build new ones let them be smaller and more convenient.

They are institutions that cannot be remodelled nearer to the heart's desire by the simple process of first being scattered to bits, and if, in defending their charm, we fail to keep them up as scrupulously as of old, then let them rest a little dirty. The present writer, not being indigenous to this island, had never even heard of a spring cleaning, much less submitted to one, until she left her own island adjacent to it. It may, unfortunately, be true that the matrons of England are not to be led so agreeably astray, and, after all, they have their reward; but the cleanliness that is next to godliness is only a second virtue in the island that is claimed by the Saints, and where, among its many mansions, the model home finds no place."

When we come to the cottage and workman's house, we see the architectural thread rudely broken off by industrialism, and we are compelled virtually to start afresh, using as much of old tradition and local character as can be reintroduced. We have already found that a cottage taken by itself is an unbalanced entity, since rooms and windows must be of different sizes, and it is extremely difficult to force a house—especially a small house where space counts so strongly—into a symmetrical case, and it is an attempt that should not be made in cottage work. With a pair, or any even number of cottages, it is perfectly easy: symmetry comes almost of its own accord, because it is only necessary to reverse the houses on either side of the centre line, and every chimney, door, and window on one side will exactly balance its counterpart on the other side. A colony of workmen's houses thus admits of perfect classical and symmetrical treatment where this is desired, but is also adaptable to any degree of freedom and

flexibility. Seeing how easy it is to obtain architectural balance in house grouping, it is the more distressing to contemplate the futile terraces of monotonous "repeats" that depress inmates and neighbours alike, and that pass us in weary repetition when we sit in the train.

It is in housing that we perhaps find the grandest opportunity of reintroducing the art of architecture, but it must be on the plainest and most economical lines. Speaking generally, if the terraced house tends towards order, the new cottage suburb will lean towards freedom in gable and detail, with order dominating the scheme as a whole. A certain degree of freedom allows of more intimate expression, and is possibly better suited to architectural variety on a site that permits of gardens and trees. The writer, in a previous work,* has dealt at some length with housing and its modern significance, and all that can be attempted here is to take representative housing schemes and see how they are treated.

The Garden City at Welwyn has provided a unique post-war opportunity, since the whole development is centrally controlled, and town planning can be practised in full measure. The City Architect, Mr. Louis de Soissons, working in conjunction with other architects, has infused a spirit into the town happily free from the conscientious striving that, in the circumstances, one might have feared. The designs are robust and lively, and successful experiments have been instituted in providing standard designs of a good type for erection by speculative builders; thus it is possible, by exercising strict

* "Everyday Architecture," by Manning Robertson (T. Fisher Unwin, Ltd., 1924). See also "Small Houses for the Community," by C. H. James and F. R. Yerbury (Crosby Lockwood and Son).



Hennell and James, Architects.

HOUSING SCHEME AT WELWYN.



W. Curtis Green, A.R.A., Architect.

HOUSING SCHEME AT WINCHESTER.

control over lay-out and design, to impart a definite civic character to the streets that differentiates them fundamentally from those we deplore in the ordinary suburb, where the building and letting of houses take place at random. We have already, on the plate facing p. 54, seen one view of Welwyn, and that on this plate shows some weather-boarded houses in another part of the town. The lay-out, logical as it is, yet avoids being too academic, and this is true of all successful work of the kind.

We must, however, turn to the schemes of the local authorities if we are to examine the possibilities of cottage architecture on a general scale, and of these one of the best is that undertaken by the City of Winchester at Stanmore. The screw of financial economy was more severely applied to this scheme than to those of the Office of Works and the London County Council; possibly it was applied too rigorously, but it is the more interesting to see what one of our most capable architects has been able to make of a scheme built under conditions of extreme economy. No one can exclaim that it is very nice, but too expensive to enter practical politics. Its appeal is one of sheer, almost Puritanical, simplicity, the brick and tile work being shown to the best advantage by a thoughtful lay-out* and careful grouping. The little shops with their large windows, glazed in small panes, are in perfect keeping with the adjacent houses, and are placed to lead the eye naturally up the hill, instead of jerking it up by stepping each roof, as was done throughout the nineteenth century. This scheme also illustrates

* The principles of housing estate development are well described and illustrated in "Site Planning in Practice," by F. Longstreth Thompson (Henry Frowde and Hodder and Stoughton).

the sensible innovation, common to all Government schemes, of building carriage-ways only wide enough to take the traffic they will be called upon to bear, but at the same time keeping the fronts of the houses, facing each other across the street, far enough apart to allow each to get its full share of sun. The houses are designed on a sufficiently wide frontage to obviate the necessity for the abominable "back projection" that shuts light and air out of 95 per cent. of Victorian suburban cottages. In all the Addison houses aspect was considered; if a house faces north the main rooms look out at the back, and so (in the absence of the back projection) obtain the sun and all its benefits of cheerfulness and health. When the houses face south, the living-room overlooks the road, and still gets the sun. One of our greatest present-day dangers is that public opinion may be too slow in crystallising to prevent a reversion to the dark and ugly houses of the past century.

Cottage design is infinite in its variety, and really good modern work can now be seen in all parts of the country, adding beauty to the scenery and interest to a journey. If the space allotted here to cottage design has been short, this is not due to an underestimate of its importance. Improvement rises naturally from a broad base, and is not imposed from above by the few. England now leads the world in domestic architecture, and in turning from the age which coined the word "Middle-Class" and perverted "house" into "villa," she is shaking off a class-conscious gentility. What is called functional architecture will achieve its justification when our houses express our needs and aspirations, and not only our restrictions and gentility.

CHAPTER XI

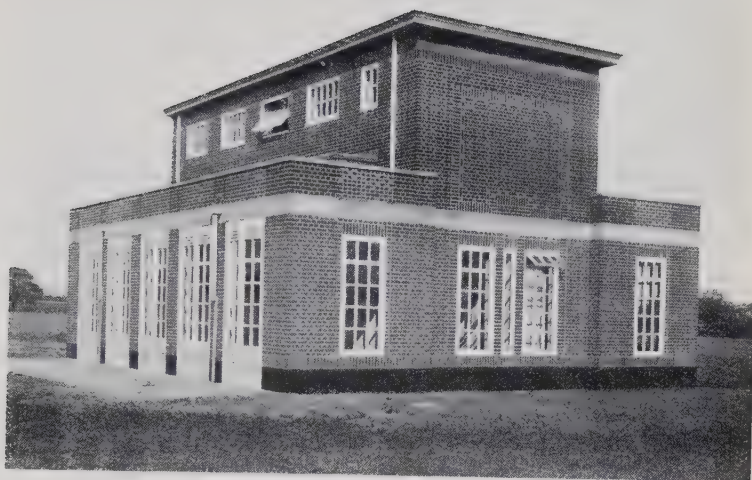
SOCIAL ARCHITECTURE

HAVING briefly considered some of the elements that underlie design, and their expression in the private house, and having seen how urgent is the need for reintroducing architecture into our everyday surroundings through a change of habit and mentality, let us pass on and examine the kind of architecture we ought to encourage in the buildings of the industrial and commercial world, and in civic life. Inasmuch as precedence is always given to strangers, we will consider the factory and the warehouse first, and follow on, through the cinema, to the original members of the architectural family.

The factory is a new-comer into the field of architecture, so new that some may wonder why it is included in an architectural book; but although it is young, the architecture of the factory has already taken its rightful place, and become an important and dignified branch of design. Most of our factories were built in the commercial enthusiasm of the last century, when commerce was so absorbing that everything else was crowded out, and architecture was consequently not called upon to contribute to factory design. It has only been during the present century that manufacturers generally have seen that a prosperous business should be adequately housed, and that a little attention to the proportion and details of the building not only serve to embellish the

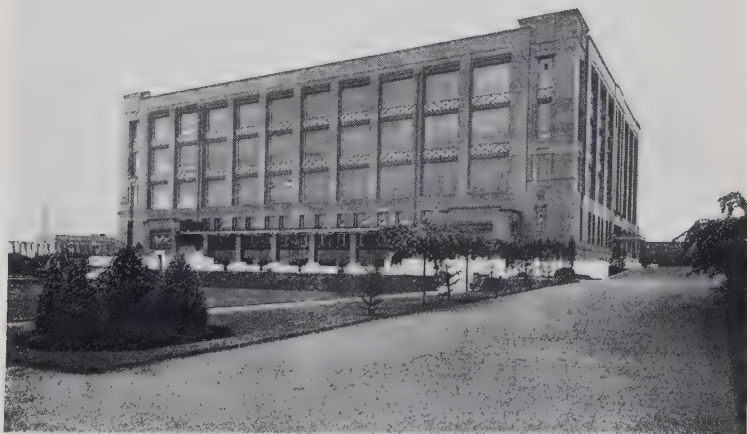
countryside instead of disfiguring it, but also produces its psychological effect upon the workers and on the public. The necessity for placing factories near the railway line ensures that they shall be seen more than any other building, and from the worker's point of view it is more inspiring to work in a pleasant building than in one that is, if not sordid, at least commonplace and ill-proportioned. It is remarkable that this discovery has only been made so recently.

The factory has developed architecturally by leaps and bounds, and no one who travels the country with his eyes open can fail to note this welcome advance. In place of the purely utilitarian, we now find attention to proportion and grouping. The Electricity Sub-station at Welwyn is typical of the best small modern buildings of the industrial type, and introduces the full beauty of brick texture and of brickwork treated in patterns. A heavy band of stone draws the design together, and the stepped-back upper storey is crowned with an unusually emphatic cornice. The small panes bring the building into relationship with domestic work of similar scale. But really large industrial buildings must rely less upon intimate appeal, and more upon boldness in proportion and outline. The Wallace-Scott Tailoring Institute, at Cathcart, demonstrates how effective such buildings can be when sympathetically handled. It consists of a large U-shaped block, built in common brick, and symmetrical on each elevation. The angles are strengthened by heavy tower pylons, and in place of the usual cornice there is only the heavy shadow thrown by the recessed window heads. The piers that run right up the façade are given prominence, and the emphasis of the horizontal lines due



Louis de Soissons Architect

ELECTRICITY SUB-STATION AT WELWYN.



Sir John Burnet, R.A., Son and Dick, Architects.

WALLACE-SCOTT TAILORING INSTITUTE AT CATHCART.



H. B. L. & Co., Ltd., Glasgow.

BOILER WORKS, QUEENSFERRY.

to the floors is removed by the criss-cross patterns, picked out in white glazed bricks, that play the part of "camouflage," and allow the three superimposed windows to form one large vertical panel. The structure is essentially plain and practical, and stands as an example of what can be done by the skilful use of a commercial opportunity.

The Boiler Works at Queensferry lend themselves to an even more dramatic treatment. The building has the significance of a great Roman wall, and the impression of power is increased by the batter of the buttresses. The dramatic effect obtained by battering the sides of buildings and openings is a primitive and powerful form of expression. We have already found it strongly marked at Lhasa, and it was, of course, a dominant feature in ancient Egyptian architecture, in the great doorways of Rome, and in the early churches of Ireland. It is a notable feature of modern buildings, and can be seen in the new extension of the British Museum designed by Sir John Burnet. The factory lends itself supremely well to arresting effects on the large scale, and our manufacturers will be doing a national service, as well as reinforcing their appeal, if they use legitimate sensation to its fullest extent as has been done at Queensferry. The interior amenities of the modern factory keep well abreast of the times, and it is encouraging to know that simple decoration is no longer neglected. Colour-wash of diverse shades, designed to rest the eye, good lighting and fittings, and well-fashioned chairs and tables go a long way to counteract the inevitable monotony of standardised labour, and they introduce a welcome touch of personality.

The cinema has arrived at the same recognition of

architecture from the opposite direction. The earliest buildings of the kind were flimsy and meretricious erections such as one associated, in pre-Wembley days, with English exhibitions. Architecture was invoked only in its crudest emotional form, but with the improvement in the programmes provided a more cultivated audience was attracted and a genuine architectural appeal introduced. This appeal has gradually been strengthened until we find in the cinema of to-day architecture of an excellence that often seems to be ahead of the attractions of the films within, and that puts our older theatres in the shade. The Street Architecture Medal, awarded for the best façade erected in London during the year, was presented in 1924 to Mr. F. T. Verity for the Shepherd's Bush Pavilion. On receiving the medal Mr. Verity said that although he had been much restricted for money, he had been able to concentrate upon large unbroken masses of brickwork, and had tried to recapture the effects obtained by the Romans in their great public baths.

The appeal of the cinema should clearly be of a more emotional and intellectual nature than that of the factory or warehouse, and this is well illustrated in the design of the Oak Cinema at Selly Oak. Here we again find the powerful cornice shadow, but the central focus of the design is classical and serves to remind us that the orders—in this case the Ionic column without the details that normally accompany it—can still claim a place. Texture is emphasised by encircling a panel of stone in a broad band of 2-inch facing bricks in the upper part of the façade, the lower part of which is in stone. Provision is made in the design for the placing of notices, which can thus be made to help rather than hinder the



Harold S. Scott, Architect.

THE OAK CINEMA, SELLY OAK.



Halliday, Paterson and Agate, Architects.

WILMSLOW PICTURE PALACE.

architecture. In the past it has too often been the practice to leave the notices out of account, with the result that the design is ruined by placards plastered thoughtlessly about the building. The distinctive quality in cinema design is the enforced absence of window openings, and this affords great opportunities for introducing unbroken wall surfaces. The design of factories, shops, and residential blocks and offices is heavily circumscribed by the necessity for constantly recurring window openings; and where the blank wall, showing texture and providing legitimate projections, can be introduced, it lends a valuable element of stolidity and repose to group effect.

Wilmslow Picture Palace belies its name, with its intimate façade, carried out in red brick and stone details. In place of magnificence it suggests a personal welcome, and might be better described as a Picture Home. It should serve as an inspiration for small cinemas and provincial theatres, and those who are constructing them would be well advised to study its quality.

The camera is proverbially unsatisfactory in conveying the appearance of an interior, but the two views of the Regent Theatre, Brighton, indicate how much of the best of modern comedy work is derived from the influence of Adam; and when we look at the bold fresco panel we are tempted to wander back further still and recall the delicacy of Pompeii. The Adam feeling and warm colours pervade the modern cinema, and, where the architect is consulted, the hotel lounge and restaurant. It is a return home from the Continental influences of gilded boss and languorous figures, the debased descendants of Boucher and Versailles. Again, Moorish imitations in cinema and restaurant have given place to the

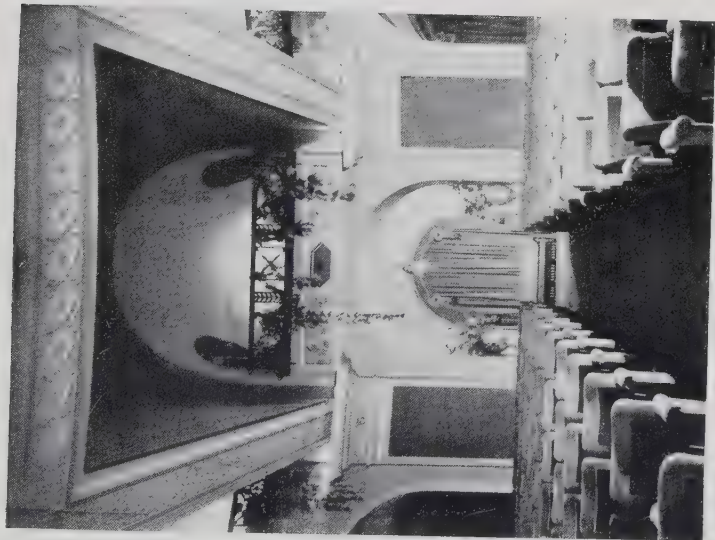
inspiration of Eastern colour design in lines and conventional patterns, chiefly introduced through the medium of fabrics or faïence.

Large shops, and blocks of offices and flats, have not generally kept pace with the factory and the cinema. Instead of standing more or less isolated, these great urban buildings join in the hubbub of the street, and there have been comparatively few attempts to treat them as quiet and dignified works of architecture in themselves, still less as contributors to an harmonious scheme. The great shop too often jostles his neighbour and attempts to elbow him aside; the neighbour, when it is his turn to be rebuilt, tries to get his own back; a competition in ostentation ensues, and finally puts an end to architectural peace and quiet.

Human beings can exhibit good and bad manners, not only in their daily intercourse, but in the buildings they erect,* and Mr. Trystan Edwards's plea for neighbourliness and good manners in buildings will, one hopes, have some result. To take a definite example of bad manners, supposing someone has built a shop with a string course 14 feet, and a cornice 36 feet, from the ground. His neighbour will probably disregard these levels and make his shop front boast its superior size by adding a foot or so to each measurement, thus destroying all effect of unity by a selfish attempt at self-advertisement. Such misconduct is so common in our shopping centres that further illustrations are unnecessary.

Bad manners can be avoided easily enough by anyone who gives due recognition to architecture, but there are more stubborn difficulties to be faced

* "Good and Bad Manners in Architecture," by A. Trystan Edwards (Philip Allan and Co., 1924).



Facing p. 98.



Robert Atkinson, Architect.

REGENT THEATRE, BRIGHTON.

by the builder of shops. The problem of the large shop front has not yet been adequately solved. The designer is asked to provide large areas of plate glass on the ground floor, with as little interruption as possible from piers and columns; but the upper part of the building, not being dedicated to display, either contains showrooms that have no need of such large window expanses, or it may contain flats and offices that necessitate a treatment of heavy walling and small windows. The difficulty lies in co-ordinating the upper with the lower part. When the superstructure contains only showrooms there appears to be no valid reason why it should be made to look like a solid residential building, but when it contains offices or flats it is still unjustifiable to treat them with heavy masonry unless sufficiently sturdy piers are permitted on the ground floor. Until quite recently no attempt has been made to co-ordinate the parts, and we find an apparently massive stone wall (which is really a stone facing applied to a structure of steel) and huge columns and piers resting to all appearances on the plate glass of the windows, but really on steel stanchions hidden behind mirrors so that they become invisible. If honesty of construction has any meaning such methods stand self-condemned.

Public misconception of the functions of architecture was well exemplified in a recent letter to the Press, when someone expressed his contempt and abhorrence of those architects who could not see that the new shop designs in bulky stone were "vast Renaissance Palaces," and hence ought to be admired. The writer of the letter himself failed to grasp that the architect's main objection to these structures is that they look like vast Renaissance

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Palaces (somewhat over-decorated) when they ought to look like attractive twentieth-century shops.

Mr. A. J. Davies, in a paper he read at the Royal Institute of British Architects, drew attention to the psychological difference in the requirements of a shop catering for the many, as distinct from the few. A large plate-glass window parading numbers of cheap articles "designed to attract the pennies of the casual pedestrian" has its own mission, while the smaller window, hinting rather than displaying, is more alluring to a select clientèle; and this second appeal is appreciated by a firm working on even such a large scale as Messrs. Liberty's. Thus the window demand falls under two heads, and while we may say that the second has already been met by many ingenious and intimate adaptations, the democratic expanse awaits solution. It is to be hoped that in the future not only will the designer lighten the top part of the building, but that the shopkeeper will meet him half-way by reducing his demand for large expanses of street-level glass frontage.

One of the pioneer buildings in which this problem was fairly confronted was the Kodak building in Kingsway, where Sir John Burnet lightened the upper part and carried his vertical piers down to the ground; but even here he had to compromise, and could only carry alternate piers right down. The façade of Selfridge's store shows a similar solution to the plate-glass problem. Here again the demand for display evidently prevented the ground piers from being sturdy enough to satisfy the eye. In Messrs. McLaren's warehouse in Glasgow the treatment foreshadowed in the Kodak building is carried to its logical conclusion, and the architect, Mr. James Miller, has carried piers of the full width right up



Smith and Brewer, Architects.

MESSRS. HEAL'S PREMISES.

Facing p. 100.

the building, but of course this implies smaller windows on the ground floor.

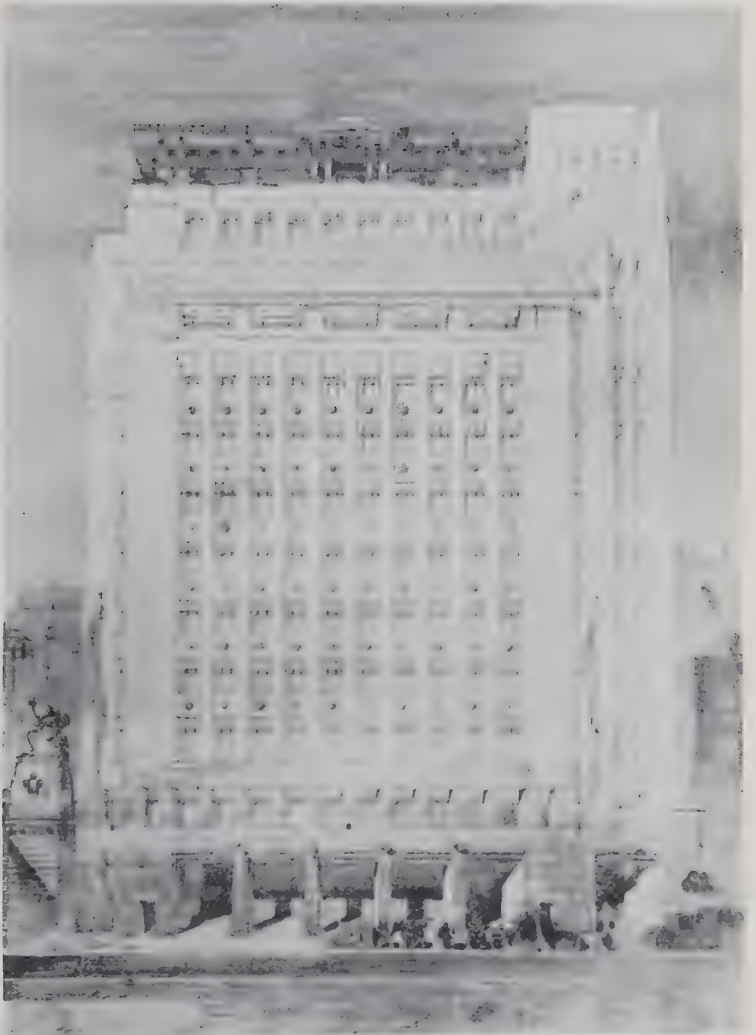
In Messrs. Heal's premises, in Tottenham Court Road, the ground floor has been given the maximum appearance of strength combined with large window space by framing it in with a plain broad band of stone that runs up at the sides and is carried along over the top of the show windows and relieved only by some fine lettering on the most stable parts of the beam. The four main piers of the superstructure are carried on shafts that appear additionally strong and solid through being octagonal. The effect of solidity is enhanced by recessing the ground floor, which is consequently kept in shadow; the goods displayed are thus protected from the sun, while those who view them are shielded against the rain. The window spaces between the main piers of the superstructure are kept strictly subordinate, and the impression is conveyed that the great beam over the ground-floor windows is more than adequate to support what little weight there is from the slender window piers. The dominating shadow is provided, not by a cornice, but by the projection of the crowning band of stone in front of the windows.

This building exhibits in a rare degree the quality of expressing its function, since the upper part could not contain flats or offices, but is obviously intended for show-rooms. The attic storey and windows are kept subordinate behind a parapet, and the façade is enlivened by touches of vivid colour introduced into panels half-way up the long windows. The proprietors are actively identified with the Design in Industries Association, and employ real artists and craftsmen in the quest for quality and workmanship; the respect shown for the architecture of their

premises results in the type of advertisement that elevates commerce and commands admiration.

Blocks of offices and flats provoke neither the desire for excessive grandeur nor for ground-floor display that hamper shop architecture, and their designs consequently show a more general improvement; but here, in an attempt to be neighbourly and harmonious, the architect, faced with badly designed surroundings, has to do his best to make an architectural building harmonise with an uninspiring or even a blatant neighbour. Among our best known and most characteristic new office buildings, we must include Bush House, Kingsway, and Adelaide House, London Bridge, each of them striking out on new lines; and although one may regret that the latter stands where it does, blocking out St. Magnus' Church, and dwarfing Fishmongers' Hall, still it is a fine building in itself—and an architect working in London cannot pick and choose his site. In Adelaide House a design essentially vertical in character is framed in by powerful angle pylons, and the main block crowned with an unusually simple heavy cornice. These cornice lines give the design much of the force and character of an Egyptian monumental work, and the even punctuation of the window openings does more than express—it dramatises—the purpose of the building. One can only hope that the original design, as here illustrated, will in time be carried out in full.

Our other example—Bush House—has been of incalculable pioneer service to the Londoner: he has been compelled to look at it, and to get used to it; its impress has been forcible and definite. It has been criticised as being too monumental in nature for a block of offices; but it is really a composite building,



Sir John Burnet, R.I., and Partners, Architects.

ADELAIDE HOUSE, LONDON BRIDGE.

From a perspective sketch by T. S. Tait.

Facing p. 102.

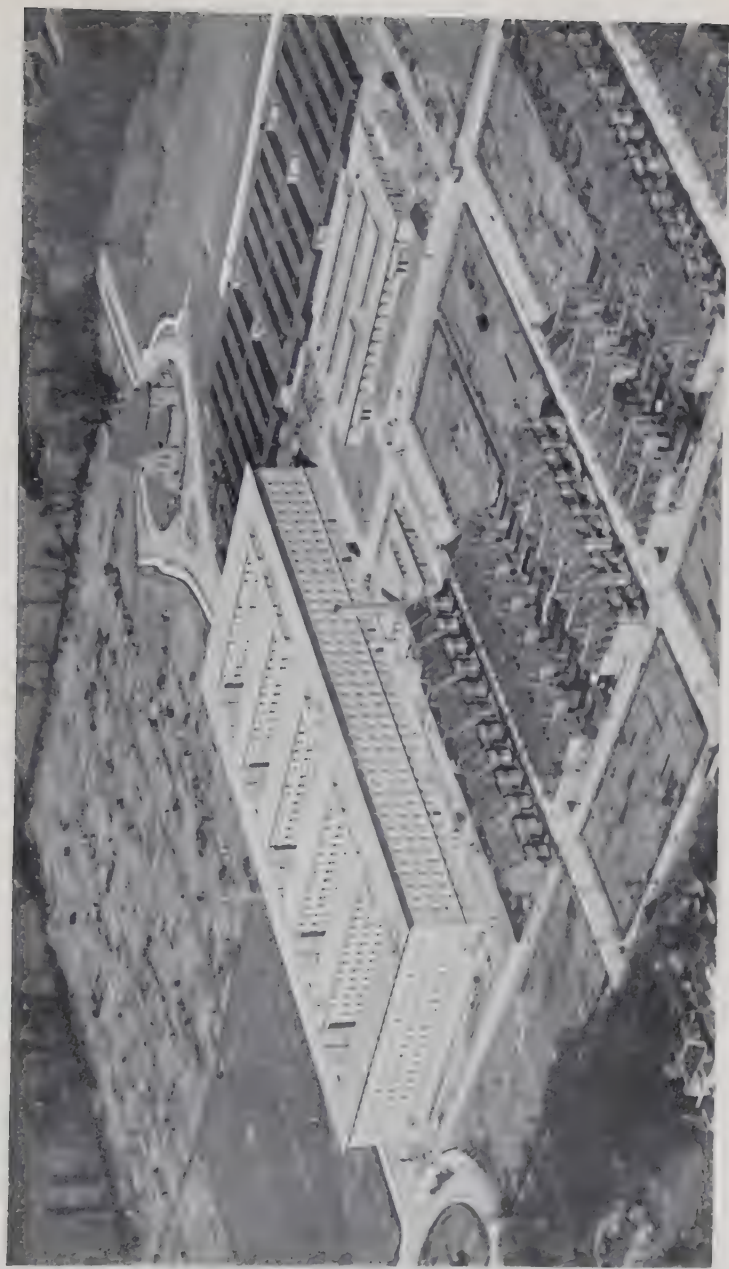
partly a monument "to the Friendship of English-Speaking Peoples," and partly an office block; it must therefore be judged as such, and due allowance made for its incomplete condition. The most striking first impression of the monument is to be had from the tram subway in Kingsway, but although its power is arresting on first acquaintance, like all great works, it holds its friends when it has made them. The effect of the centre block looking down Kingsway cannot be realised until the wings are present to give scale. Bush House has pandered to none of those effects to which the Englishman has become accustomed. Seizing upon one dramatic façade, the American architects, Messrs. Helmle and Corbett, have given the building a distinctive outline by stepping back the upper storeys, a device that originated in America through the necessity of admitting a modicum of light to the streets and buildings adjacent to the high structures of the American cities.

Although there is an active exchange of ideas between us and America, there exists there no particular school of thought from which we are borrowing, but we are still learning a great deal from their development of high buildings where the vertical line is always predominant, as it is in the Victoria Tower—our only skyscraper. The exchange between the two countries is more neighbourly and mutually helpful than revolutionary, and we are certainly not going to borrow the skyscraper, a form that America herself is trying to discard.

That a Government department can itself directly produce notable work has frequently been demonstrated, more especially in the Ministry of Pensions' prodigious building at Acton, designed by Mr. J. G.

West of the Office of Works. This building comprises accommodation for 6,000 officials, and is built of concrete blocks and steel. It is an immense five-storey rectangle, 540 feet long by 247 feet wide. There are five courtyards inside, and 640 windows on the outside. This building is probably unparalleled for sheer simplicity that has "come off." The corners are strengthened by powerful raised quoins, and a heavy band of shadow crowns the building, due to a cornice formed of a slab of concrete that projects 4 feet from the face of the wall. The ground-floor storey is slightly rusticated, as also are the arches over the main entrances. The roof is flat, and the inside is as severe as the outside. The structure illustrates the imposing effect of vast mass handled with dignity and restraint.

Our final illustration of buildings of this type can be seen in the frontispiece, which shows the proposed Piccadilly façade to the New Devonshire House, a design in which America and England have joined hands. The problem here was to combine in one design shop fronts on the ground storey and flats above. Few will deny that the solution here offered is a successful one. The ground-floor shop fronts are divided by piers of sufficient substance to impart the requisite appearance of strength to support the superstructure. Classicism is represented in the Ionic pilasters to the ground-floor piers which are thereby made the more capable, to the eye, of supporting the main superstructure, which, despite its size, is kept as light and elegant as possible, and entirely free from heavy ornament, columns, and pilasters. No one can look at the simple surface of the main façade without realising the value of reserve in architectural effect. The lower angle



PENSIONS OFFICE AT ACTON.

Facing p. 104.

Wesd. Architect.

blocks present the right degree of contrast to the set-back façade in their apparent strength, and in the variety of texture introduced by the rustication. The building is crowned with the heavy cornice which is a characteristic feature of nearly every modern building. The interest of this building, to the layman especially, lies in its outline and projections, and, when erected, it will be a source of legitimate pride to the London of the future. We cannot leave the perspective drawing of the New Devonshire House without commenting upon the skill of the artist, Mr. Cyril Farey. His work is so well known in the Academy and elsewhere, that it is only necessary to draw attention here to the way in which he has subordinated superb draughtsmanship to the practical purpose of illustrating the building, and what it will really look like in its Piccadilly surroundings.

Let us pass now to the municipal building. Here there is reason for making a bolder and more personal appeal than in the work we have been considering. It is the centre of civic life; but just as it is ill-mannered for those in authority to parade their position, so will the municipal building be well advised to present its display of dignity with due modesty. The Marylebone Town Hall, designed by Sir Edwin Cooper, is a fine example of its type, although, possibly for reasons connected with expense, the tower appears strangely unsupported. Unquestionably the finest modern municipal building is the Town Hall, by Ragnar Östberg, that overlooks the sea at Stockholm. It is Venetian in character, with an open arcaded ground storey, and at one corner a plain massive square tower culminates in a cupola reminiscent of the Orient. Like so many

of the best new buildings in Sweden, it has been allowed a generous situation and room for its own expression. It stands as a noble tribute to the art impulse of its country, an impulse which helped to make it, although it is essentially a work of individual genius, rather than a type illustrating the general trend.

The illustration shows yet another type—the scholastic. In these new buildings at Clare College, Cambridge, the architect has produced a design of astonishing freshness and originality. The focal point is an immense recessed arch, and character is imparted by a scrupulous attention to detail; for example, the rusticated quoins and the arch rings are not kept to a uniform size, but alternate between two bricks and three bricks in thickness, being separated by the thickness of a single brick. The plain brickwork surrounding the main arch emphasises the focus better than any possible elaboration, and the whole forms a design of extraordinary beauty and purity, curiously akin to the Swedish Academy of Engineering and Architecture.

We have considered principally exterior work, first, because it is more easily classified and presents greater scope for architectural illustration than does the interior, and also because the outsides of even such public buildings as churches, shops, and theatres are seen by many more people than the insides. Speaking generally, the same influences are at work in both; broad surfaces and carefully selected internal colour schemes take the place of stereotyped and promiscuous ornamentation. What detail there is shows increased refinement in line and moulding; attention is concentrated upon the proportions of doors, windows, panels, and fittings; and in floors, whether of wood, marble, terrazzo, tiles, or patent



CLARE COLLEGE, CAMBRIDGE: NEW BUILDINGS.

flooring, we find again that colour and design replace ornate elaboration, and open up a wide field for experiment and selection. The restrictive code of the "period" phase is happily passing and releasing the designer, and this will certainly react upon the craftsman and the cabinet-maker. Traditional influence will not be weakened, but the mannerisms of the past will be dropped. When new work is found to be beautiful the craze for historical periods will fall out of fashion, and genuine old work will take its proper place with the best of contemporary productions. In spite of much folly and humbug the antique mania has educated taste, and although perhaps more self-defensive than constructive, it has helped to preserve old work and to establish a basis of discrimination upon which good modern design may flourish.

Buildings will be influenced by many new considerations, chief among which are lighting and acoustics, and we will end this chapter with a very brief review of some aspects of these new sciences.

The lighting problem that will most affect design is that of adequately lighting pictures, and this applies, of course, especially to picture galleries.* The ideals to be aimed at are well epitomised in the conditions scheduled for the Manchester Art Gallery Competition: "Very careful consideration must be given to the lighting of the galleries, and in top-lighted rooms the light should be so devised that it is thrown mainly on the walls and not on the floor, and so as to avoid reflections on the glass of the pictures. Artificial lighting should be arranged so

* "Recent Observations and Tests on the Lighting of Picture Galleries and Museums," by S. Hurst Seager (*Journal of the Royal Institute of British Architects*, December 20, 1924).

that the source of light is as nearly as possible from the same direction as natural light, and so that reflections are avoided." There is no necessity here to enter into detail, but Mr. Hurst Seager, a recognised authority on the subject, makes a special plea for the use of translucent blinds in existing galleries; by this means, he points out, glazed pictures can be exhibited free from reflection, while the amenity of the galleries would not be interfered with. The treatment of new galleries is a highly technical science, and one can only recommend that no one should attempt it without expert knowledge or guidance.

The new science of acoustics is of still wider application, and here we find an influence that will profoundly affect the design of every building that is intended for music or public speaking. In the past we have been prone to overlook this important function, and it is only now being scientifically investigated, although the Greeks brought acoustical planning to a high art in their open-air theatres, and Vitruvius, in his fifth book, treats the subject as a recognized science. Mr. Hope Bagenal, in a paper read before the Royal Institute of British Architects,* draws attention to the revolution that applied acoustics must effect in the design of buildings, and he tells us that "the best Anglican auditory is the City church," thereby paying a compliment to Wren's thoroughness. Those interested should read the paper, where they will find the titles of the principal books that have been written on acoustics. Mention must also be made of the pioneer work and exhaustive experiments that have been carried out by Professor Paul Sabine of the Geneva Laboratory, Illinois, U.S.A.

* "Planning for Good Acoustics," by Hope Bagenal (*Journal of the Royal Institute of British Architects*, November 22, 1924).

As to the physical properties of sound, it is sufficient here to say that it is not a capricious will-o'-the-wisp, but is as obedient to definite natural laws as light. It can be reflected, absorbed, and intensified at will, and the study of its properties will form one of the most valuable of the applied sciences of the future. So little are the properties of sound generally understood that when rooms and halls are used for concerts or public speaking, one as a rule finds absorbent materials, such as curtains and hangings, placed round and behind the source of sound where hard reflecting surfaces are required, while the far end of the room, which demands an absorbent surface to prevent echo, is generally left with a reflecting surface, such as plaster or panelling. The amplifier has a great future before it, as a corrective to rooms that were acoustically badly designed at the outset.

An eminent Royal Academician—an architect—not so long ago expressed the opinion that “if a building is pleasing to the eye, it will be good for sound.” This theory is not always borne out by the facts as known to-day. In concert halls and debating chambers we shall have to accustom ourselves to lower ceilings, generally flat, or perhaps coved or splayed at the angles. Again, the acoustical requirements for intoning and choral singing are not consonant with those demanded by the preacher. The acoustical properties of the medieval Gothic church rendered the slowly moving choral service and the intoned liturgy inevitable, whereas the quick changes and staccato effects required in the more modern classical music are destroyed in the great vaults of a Gothic cathedral. The House of Commons, which is recognised as a good room for speaking,

only became so when the ceiling was lowered, and the present ceiling with a flat centre and splayed sides was introduced. The House of Lords, which retains the original high ceiling, is still acoustically atrocious. It is, of course, more difficult to design a hall where speakers can be heard from any part of the room than a hall used on Continental lines, where every speaker addresses the house from a rostrum, and where the building is planned to give the best effect only from that point. These problems, and others, such as the placing of reporters where they can hear, will form a science that cannot in future be ignored. The application of this science to buildings of various types will profoundly affect design, and its demands will help to infuse new life into architectural forms.

CHAPTER XII

THE CLERGYMAN AND THE CHURCH

IT would be inappropriate to include the clergy among laymen without a word of apology and explanation. For the purpose of this book, the word "layman" has been taken in that particular dictionary sense which runs: "pertaining to the people." In the past the clergy have been more than amateurs of architecture, and their attitude as an organised body still exerts a powerful influence on the art. This applies not only to the clergy of the Established Church, but equally to those representing the other branches of the Christian Faith. Our clergy now do not claim to be of the initiated in art, but are of the people—laymen, in fact—and it may be instructive to enquire why the division between religion and art, which is so obvious to-day, often touches antagonism.

At first sight the attitude of the churchman appears to abound in anomaly. With one breath he says that all beautiful things are to the glory of God; with the next that God only values the spirit of the offerer; and, when it suits the emergency, the churchman often makes this spirit the justification for tolerating artistic atrocities. This mental and moral attitude bewilders the artist and appears inconsistent; he knows that beautiful things have a real value, and he does not see that piety can atone for the absence of beauty or the presence of the meretricious. He judges in terms of art; the priest

(and those who think like him) in terms of devotion. The misunderstanding partially arises from the use of the word "beauty." To the clergyman it is almost impossible to dissociate it from definite moral purpose; if an object symbolises in a poor art form something that is good and uplifting, and which will appeal to the uncultivated in his flock, he will say that it has achieved beauty. The associative image will be confused in his mind with æsthetic expression. Such an illusion is exasperating to the artist; he may be willing to admit the moral beauty of the pious impulse, but he will deny the existence of æsthetic value; he will not surrender his judgment and his taste to religious bias; and if the clergyman is shocked, a split will occur. Although this misunderstanding is a contributory cause, the trouble appears to lie deeper; the churchman too often believes that art is not an ally, but should be a servant, and that when it is not being used for some definite moral end, it must be left out, or at most be employed amiably for recreation. Unless he is an artist himself, not necessarily a creative artist, he naturally denies it absolute value or significance, and bemoans that artists will not make the dedication and lay their gifts on the altar, wholeheartedly and without reserve. May we conjecture that he tends to see art only in terms of the first three circles, as an æsthetic gift to be used or misused as an associative image of life—and not of God? During the medieval ages, when art was her servant, the Church achieved glorious results: architecture, music, sculpture, and painting contributed of their fullness to worship, and the age of piety was the age of art; then came the Reformation; later the "Parliamentary Visiter" of Cromwell (who was paid so much per image broken);

art was mangled and lay in the dust. We know that neither art nor Faith perished, but the former arose her own mistress, and reclaimed her liberty to exist apart. Certain voices in the Church will never recognise that liberty; art, they say, is either of them or outside them. They will cite the unfortunate examples of individual artists who prefer a country walk to public worship. Yet many churchmen, devoid of artistic perception, will recognise the value of a service spontaneously conducted in the starlight. They and the congregation will feel awed by the mystery of the stars, and by their own comparative insignificance. A devotional stimulus will thus be set up, and their minds attuned to religious aspiration.

What the churchman so often fails to see is that to the artist the building he is in, the music he hears, the pictures he sees, and the words he listens to, bear a spiritual message comparable to that communicated by the firmament; in other words, that the fourth circle of art, the works of nature, and the religious impulse, bear witness to one and the same Spirit—the Spirit of God.

When the Early Christian Fathers confronted the Pagan world, they did not reject the old forms and cults of the “natural” religion existing before their appearance, they added them to their own legendaries and doctrine; they recognised that fundamentally these cults resulted from a religious impulse, and they proceeded to turn them to the most practical account. We may admit boldly that there is much of Paganism in the art of to-day and also among its votaries, as well as much self-sufficient æstheticism, and this no doubt partly accounts for the churchman’s shyness of art; but the existence

of these influences should not distract him from its real message, which is all on his side. He cannot, however, approach the artist with a mere associative image. It is of no use to expect the architect to respond to an arch merely because it is a pointed arch and calls up images of medieval devotion, or to be impressed by a spire because it is a spire, "pointing upwards." The Gothic habit pinned to association leaves the architect cold, if it does not actively irritate him.

We may all admit the difficulties with which a clergyman has to contend, especially when he possesses strong individual taste and wishes to apply it to the improvement of his church, its fittings, and its services. He is at once opposed by a wall of resistance, not always consciously obstructive or hostile, but suspicious and distrustful of the unfamiliar. Those of his congregation towards whom he feels most sympathetic are the most difficult to dislodge—the simple, the aged, and the poor. They frankly dislike change; they are used to the present order bequeathed by the Victorian tradition, and are uninterested in art. Half the hymns they like best are poetically and musically the worst, but they like them because they are used to them, and the same power of association applies to what they look at in church. They find devotion through easy routine, and as they are generally the members of the congregation who are the steadiest church-goers, we must expect reform to come very slowly. The clergyman who still intends to make a move and believes that he can carry enough of his congregation with him, will find encouragement in the impression that can be made by an incumbent with vision and discrimination.

In this connection take the Parish Church at Thaxted. It is a fine Perpendicular building, happily untouched by the Victorian; the interior glows with light, and the proportions are allowed to assert themselves by the absence of fixed pews; but the charm to the artist lies not only in the architecture, but in the extreme vitality whereby that architecture is allowed its full significance. We find a sense of public contribution in the decoration, unconventional but appropriate. The chancel banners are in plain pastel colours that, if taken outside, might appear merely pretty, but that show themselves inside to be surprisingly in keeping with the architecture. The side chapel reredos is a fine blue curtain. Every detail conveys the sense of artistic devotion, and helps to compose a whole that humbles the artist where he is so often exasperated. By such means alone can he be drawn back to make a live contribution to the daily force of public worship. The artist has no desire to outrage association; he appreciates its poetic value, and he desires to preserve and use it: but it must be association properly applied.

The clergyman belongs to the only organised body of opinion, with the exception of the architectural profession itself, that takes architecture seriously. His faith is enshrined and reflected in buildings that represent the whole history of English architecture at its best and purest. He is to a great extent responsible for their upkeep; to him church architecture is Gothic architecture. Now no one will deny that this is a magnificent form that perfectly expressed its own epoch; but Gothic is not our natural mode of expression to-day. In present-day building it is not, therefore, astonishing to find that the clergyman with his Gothic outlook often constitutes an

active impediment. He does not see that it is impossible to take the art form of one generation and transplant it bodily into another without sacrificing its life. This is the lesson taught by the failure of the Gothic Revival. Associated with this great art movement are the names of men of extreme ability, perhaps of genius; but the attempt was doomed to failure, just as we should fail if we attempted to write fugues as Bach wrote them. As individual works of art no doubt some of the churches of the Gothic Revival can claim a high place. Judge them by any set standard, and you can make out a powerful case in their favour. But they do not live. A medieval church is redolent with life—so is a Wren church. Even when the architecture can be shown to be indifferent according to accepted standards, it is still alive. Must we, therefore, say that the Gothic Revival was a dead end, or did it ultimately produce any church containing the divine spark? To many minds Liverpool Cathedral is the justification of the attempt to revive the Gothic style. But there we find a divergence, a bold grouping of masses that heralds the approach of something vital. It contains that touch of the elemental and dramatic that seems, if we examine art history, so often to be a sign of renewing vitality. It does not, however, owe its vitality to Gothic mannerism, imitation, or even Gothic tradition. It is a work of art that is rooted in the spirit of Gothic freedom, but it has its being in the fresh air of to-day. It may thus be taken as the harbinger of a new era that will diverge further and further from what is popularly known as Gothic.

Professor Lionel Budden, in an appreciation* of

* *The Architects' Journal*, September 10, 1924.



Sir Giles Gilbert Scott, R.A., Architect.

LIVERPOOL CATHEDRAL.

From a perspective sketch by T. Raffles Davison.

Facing p. 116.

this building, has drawn attention to a divergence in which we can trace the blending of Gothic freedom with classical symmetry. He points out that: "Most, if not all, of the medieval cathedrals have achieved unity of design in their interiors, rather than in their exteriors. This has been primarily due to the placing of the dominant vertical feature, the dual mass of the towers, at the western end. Externally, such a building only gives an effect of balance as seen from points opposite that front; viewed laterally the composition has all its weight disposed at one end. There are, of course, exceptions to this rule—Salisbury for one—but in no case has so completely symmetrical a scheme as that proposed for Liverpool been adopted. From the portion that has been executed, it is probably easier to imagine what the whole will be like inside rather than to apprehend the total outward effect of the finished building. For though the elevational appearance of the nave and transepts still to be built will, unless the scheme be further modified, closely echo that of the transept and choir now completed (so that we may anticipate its contribution), the addition of the lofty central tower must, when it comes to be done, make a more dramatic and less calculable difference to the exterior than to the interior."

Liverpool Cathedral certainly presented an almost unique opportunity. The situation on a hill commanding the sea, its size, and the red sandstone of which it is built, all help to show to advantage a design that is as fine as the opportunity.

But although new work has an interest for him, it is not with new buildings that the clergyman is mainly concerned; his influence is chiefly felt in those that are of medieval date. It is, therefore, important that

he should be clear in his mind as to how these should be treated, and how far he can wisely give rein to his natural affection for Gothic. He must rest assured that no architect would blame him for his admiration of Gothic architecture; on the contrary, the architect joins in wonder at a supreme marvel. But the Gothic tree is not in the garden now under cultivation, and if we pull the tree up by the roots and carry it across, it will die. We must plant a new seed, express modern ideals in a modern building, and make a compromise when we are dealing with a medieval one, for it is one thing to build a new church, another to restore or add to an old one. We can, of course, with complete justification make good the ravages of time by faithfully reproducing what previously existed, but before we can suggest a course of action when we wish to add to a medieval church, we must examine the methods of its builders, and see whether we can learn a lesson from medieval practice.

Our ancestors, to whom we owe our cathedrals and churches, were supremely great builders; throughout the Middle Ages Gothic architecture was developing continuously and producing a series of magnificent architectural forms. It is important to grasp that at any given stage in Gothic development architecture was advancing as a whole, the Church leading the way, as would be expected seeing that it was the seat of the whole culture of the time. Now when a mason in the Early English period wished to add to a Norman church, he added to it in his own Early English manner, and he never deliberately went back to a previous style that presumably he would have considered out of date, and the same applies to every other period of

Gothic.* In applying this principle to ourselves one does not suggest that if we wish, for instance, to add a vestry to an Early English church, we should go to the full extreme and build an addition that in material or design is out of keeping with the structure; we must pay regard to the harmony of the completed building. But our vestry should bear the character of a twentieth-century addition, and we should not attempt to put ourselves in the position of the Early English mason, and do what we think (probably erroneously) that he would have done had he been in our place. When we say that Gothic details and mannerisms should be left behind altogether, or at most vaguely reflected in our new churches, it will be argued that Gothic is the most suited for worship; but is not this contention tantamount to saying

* Canon G. M. Livett, F.S.A., has drawn my attention to a noteworthy exception in Rochester Cathedral. Here, between the second and fourth bays west of the crossing, the fourteenth-century mason, when he was bidden to cease the work of reconstructing the building from east to west, was faced with a gap between work of his own period and the Norman work adjacent. Canon Livett's reasons for believing that in filling this gap the mason deliberately copied the Norman appear to be unanswerable. Of the Triforium he says: "The fourteenth-century bankerman's imitation of the zigzag Norman voussoirs and scalloped caps is sufficiently good to have deceived the eye of modern architects of repute. On the other hand, the design of the diapering of the tympanum (if the wall face between the sub-arches and the over-all arch may be so called) shows a somewhat different spirit. That the whole of this work is a fourteenth-century imitation of Norman work there can be no doubt. It is evidently a rebuilding in fourteenth-century material; it shows subtle differences of design: and if further proof be needed it is afforded by the workmanship, for the stone was faced, and the carving executed, not with the Norman bankerman's axe, with which all the work of the undoubted Norman bays was finished, but with the chisel and carving tools of the later period."

that religion itself is a medieval affair? If religion is to be a vital force to-day, and is to enlist the enthusiasm of the artist of to-day, it can only be expressed in the vital architecture of to-day, and this is a point that cannot sufficiently be emphasised.

The clergyman's Gothic habit constitutes in another direction a serious menace to our national treasures. It permits continued and untiring attacks upon Wren's City Churches. That such attacks are well meant, and are associated with the relief of crying needs elsewhere, only makes them the more dangerous. The church authorities insist that it is for the clergy to be the final arbiters on which work of art is to be preserved and which destroyed. It is astonishing to note the assurance with which a curate will walk through the City and point with his umbrella at this church or at that church, and say that this is good, but that not worth keeping. If these were medieval churches, would there be so much insistence upon pulling them down? Is it not certain that some other way would be found out of the present difficulties, which admittedly are very great? If the church authorities were moved by a real love for these buildings, and appealed to the highest in the community, instead of threatening in the manner of the commercial world, they could enlist powerful aid in the preservation of the churches and in the removal of the grievances concerning them. This method might fail, but the Church has not even attempted persuasion nor made any general appeal; it has aimed straight at demolition, and incurred much regrettable hostility from its own well-wishers.

In church architecture the tendency is, therefore,

to bring the church into line with other present-day buildings, thus symbolising the part played by religion in modern life, and not side-tracking it as a medieval relic. Thus, in a brick town we find a brick church, stone where stone is available, concrete where that material is appropriate, and timber and other temporary materials, each treated according to its limitations, when only such are available or expedient. We find the mass treatment of brick on a large scale, used as the Romans used it in their great baths at Rome. Increasing stress is laid upon the beauty and texture of the brickwork itself as a contribution to proportion. What ornament there is is woven into the texture of the fabric in the form of zigzag patterns in brick or tile, blue brick headers worked into diaper patterns, and similar simple devices that depend more upon care and thought than upon any extra expenditure on materials. The value of shadow as a factor in design, both without and within, is an essential consideration in the balance between window and wall openings, and apart from its structural virtue the interior arch—not necessarily the pointed arch—offers wonderful opportunities for shade contrast. The stained-glass window is as often a tragedy as it is a glory, and should not be regarded as an individual adjunct. When present at all such windows should form part of a preconceived whole, and left to be carried out later on definite lines, if they cannot all be put in hand at once.

The interior of a plain brick church offers an excellent opportunity to a congregation of taste through the introduction of good curtains and hangings, oak panelling, chairs and chests, wrought-iron work, well-designed brasses, and really good sanctuary rugs, many of which adjuncts possess acoustical

properties that should be utilised. A list of "verbotens" should hang with the church notices in every porch, and should include the uncomfortable, immovable, ill-designed pew, the standardised eagle lectern, the curly brass and varnished oak sanctuary rail, all white marble memorial tablets, and the familiar encaustic tile.

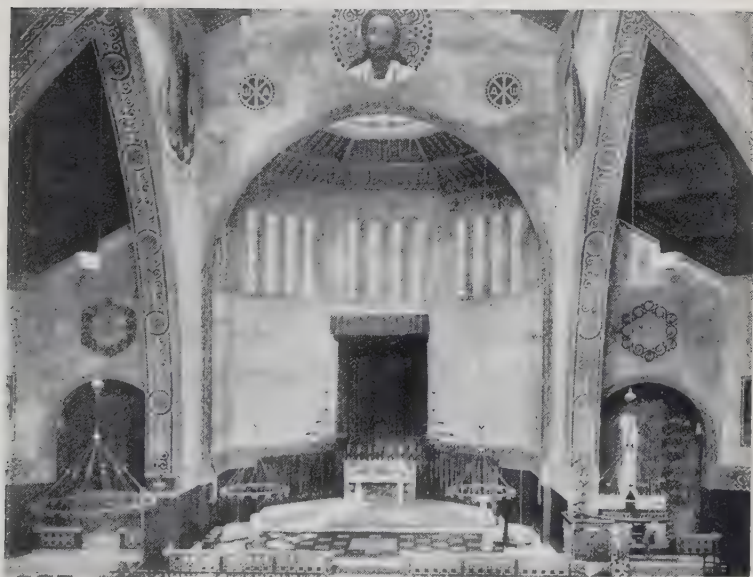
In certain districts where ballast is available, and bricks are not at hand, practical considerations will compel us to use concrete as a material for church construction. This entails a responsibility in design that cannot be shirked, and to the man of imagination, concrete, and more especially reinforced concrete, conjures up visions of great possibilities. It lends itself not only to great masses, such as we saw at Wembley, but can also be treated with an astonishing freedom of line, arches and tracery. But if we are to be effective, we must strike out boldly on our own account, and not try to copy medieval details. With our new material the necessity for heavy buttresses disappears; the skeleton is lighter, columns are thinner, and we get a structure that must not be thought of in terms of Gothic, but solely in terms of proportion, texture, colour, and suitability—in fact, in terms of architecture. France has led the way in this experiment, and the churches at le Raincy and St. Louis, at Vincennes, both near Paris, are of so unusual a nature that the following account, given by Mr. H. M. Fletcher in the course of a speech,* will be of interest: he said that, accompanied by some architect friends, he made the journey to le Raincy from Paris. They agreed that the church was a fine piece of pioneer work, impressive in its way, but still groping. The plan was a traditional

* See *The Architectural Association Journal*, November, 1924.



A. and G. Perret, Architects.

CONCRETE CHURCH AT LE RAINCY.



Droz and Marrass, Architects.

CONCRETE CHURCH AT VINCENNES.

To face p. 122.

church plan of nave and aisles, but the aisles were only separated from the nave by slight reinforced concrete posts. From the inside the effect was that of a birdcage. The walls, with the exception of that on the entrance side, gave the impression of one great window. It was what the later Gothic people were trying to do, but could not, because they were building in materials which had no tensile strength, and they were therefore obliged to build great buttresses outside. This church had no buttresses and no external walls; the walls being simply a series of articulations filled in with glass. The effect was impressive, for there was colour from end to end and all round from the enormous amount of glass area on each side. The colour of the glass had been treated in a curious way; it began with warm colours at the west end, and became a blaze of blue at the east end. It was very striking, but one might easily become tired of it. The roof appeared rather oppressive, and might have been improved had it been perforated like the walls. The concrete in the interior was left as it came from the shuttering, and it gave an impression of bareness and untidiness that was distasteful in a church; the structure remained cold and uninviting, in spite of all the blaze of light from the coloured glass. The tower of the building was one of the most characteristically concrete portions of the building, and reminded one of the tower of Antwerp Cathedral on a smaller scale.

Mr. Fletcher also mentioned another concrete church at Vincennes, designed by MM. Droz and Marrast. This church differed from that at le Raincy, in that the bare concrete had been covered over, except in certain places, and the contrast was instructive. The plan of this church consisted of two

great pointed arches crossing two other pointed arches, the effect being that a very small church appeared spacious and impressive. Only in the windows was the concrete left bare, and these were designed on a different scale from those at le Raincy. The windows at Vincennes were formed of a great slab of concrete, pierced with holes, each little hole containing one piece of uniformly coloured glass so arranged as to produce a magnificent effect of colour. The whole of this church was plastered and decorated with colour, and certain parts, such as the altar rails and the pulpit, were treated with faïence, which was not built up as a structural material; the structure was built of a quick-setting cement, into which the faïence was pressed before the cement took its set.

The scrolls on the great arches are painted, and the church is strongly reminiscent of the Cathedral at Monreale.

In England we find brick playing an increasingly important part in church design, and in illustration of its possibilities we can turn to the church at Gretna. This church is particularly interesting, as it was built of the cheapest materials, and the architect had to attain the best effect he could, during the war period, with the only bricks that were available. These were extra large wire-cuts that individually look unpromising enough, but when they are taken in the mass and properly handled, the variety of their colour is sufficient to lend them distinction. It will be seen that all the arches are semicircular, and that dignity is achieved by piling up masses of brickwork until the design culminates in a large octagonal cupola, all the roofs being covered with pan-tiles. The dramatic sense is stressed, and kinship can be traced between this small building and the great church



Evelyn Simmons, Architect.

CHURCH AT GRETN.

Facing p. 124.

(as it was when it was built) of Santa Sophia, which, as we have already noted, is one of the most conspicuous of dramatic structures. The Byzantine influence is likely to be shown in many of our new churches. The interior is here cross groined in three equal vaults with a dome at the crossing and a barrel vault over the two transepts. The sanctuary and ambulatories are also cross groined, and the brickwork is left exposed; thus, the interior is as simple as the exterior, and anyone who has visited Westminster Cathedral will appreciate the fine effect of walling on the large scale in bare brickwork.

We have already seen that every building designed for music or public speaking will in the future be subject to the new science of acoustics, and it follows that churches will be among those buildings most concerned. But apart from this particular problem, the examples we have reviewed indicate that churches are likely to be more radically affected by the new architectural movement than any other type of building, and it is right and fitting that this should be so, since no one who values the welfare and influence of religion can wish to see it railed off from fellowship with everyday life. The Gothic impulse is not to be recaptured by fakes of medieval details; it is found again in personal contribution to the glory of God in the spirit of devotion.

CHAPTER XIII

RECREATIONAL ARCHITECTURE

IN nature we have found suggestions of classic order and Gothic freedom in the Palm and the Cedar, and we have traced these influences in the preceding chapters; but we can also discern natural effects that are playful and intimate, and that stand rather outside the categories of freedom and order. The Silver Birch suggests caprice and elegance, and its rôle when translated into the lighter side of architecture has its significance. To describe this element as recreational is not to underestimate its quality. The architectural value of a building lies, not in its practical efficiency, although this is a contributory factor, but in the effect it produces on the beholder. The architecture of the recreational mood is in essence abstract; it seeks beauty consciously, and is urged to seek it by a spontaneous impulse. It springs from a desire for decoration in an architectural form, and its expression is not dictated by practical requirements, nor, as a rule, is it so strongly fettered by the pressure of economy. A certain sum is allotted to the provision of an architectural effect, and not only for the provision of specified accommodation, and the importance of the distinction is obvious.

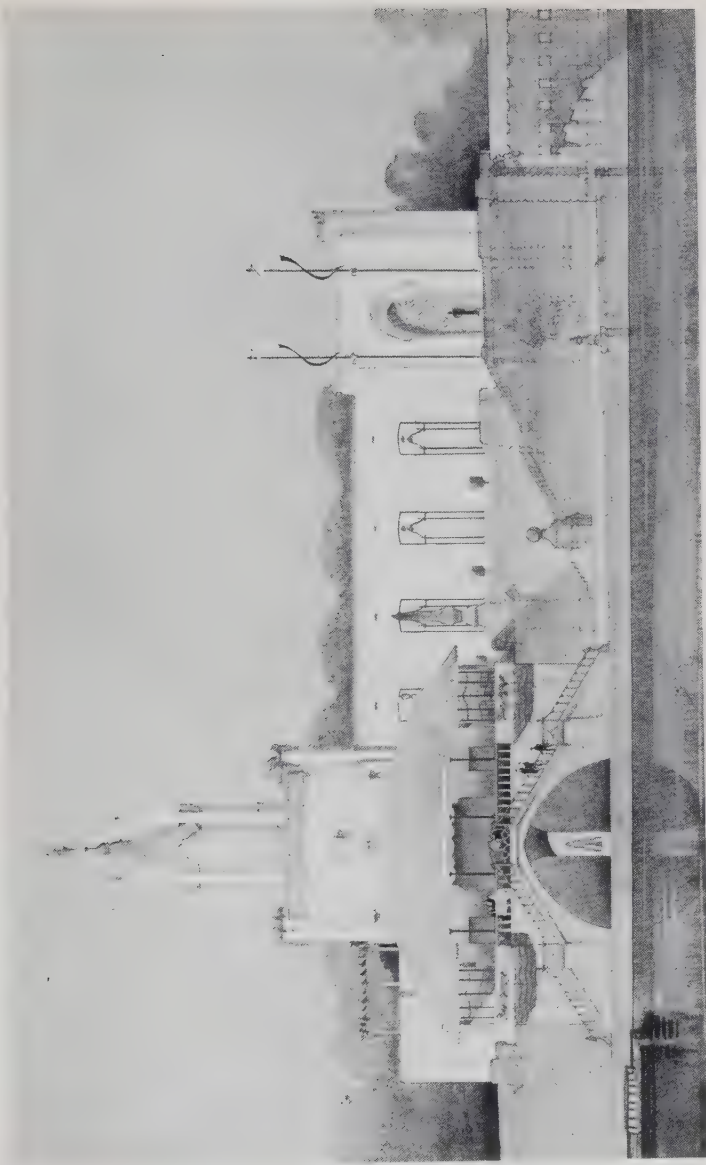
To those confident and hopeful of the present movement in architecture, nothing is more typical of its sanity and health than the delight in recreational expression, as shown by the men who are most

representative of the new tendency. Austerity is left where she is needed, and the traditional forms of grace and ornament are called upon to provide inspiration to loggia, arcade, and pavilion. Details such as steps, piers, balustrades, and sun-dials or statuary, can lend a virtue to the smallest garden design. It is not necessary to buy or copy the Italian urn, when the potter's art is so vigorous in England. This art is not limited to good designs in terra-cotta, but colour has revived too, and there are endless possibilities in rough glazed ware suitable for outdoor effects. Movable details—whether statuary, vases, bronze tripods, or similar ornaments—can also play their part as features to relieve the severity of large-scale architectural designs. It is, however, with architectural features of a definitely recreational kind that we are now concerned.

One of the widest fields for the exercise of this art is provided within the arena of an exhibition. At Wembley the main buildings, or palaces, were constructed for permanence, and were designed to express the dignity and stability of industry. The recreational mood was introduced by the individual exhibitors, either in interior stands, or in detached pavilions and kiosks; and although it was pleasant to trace a distinct advance on anything hitherto displayed, one would have liked to see more definitely architectural influence and co-operation in grouping. Commercial enterprise dislikes fetters, and too often shuns good taste, but it would be better served if it were to try the experiment and advise its different branches to enlist groups of architects, working to a definite scheme of design and colour, instead of continuing the spot system of a deliberately individual appeal of assertion. As it was, the Exhibition in

the opening year suggested austere mass on the one hand, and on the other uncoordinated snatches at colour and gaiety. The effective and comical introduction of the "Soldier Gate" at the entrance to the Amusement Park might, for example, have had a more adequate response in the design within. Architects were consulted, notably by the gas industry, but they were neither consulted enough, nor was the co-operation adequate. There was, in fact, an absence of the town-planning spirit, and the fine contribution of the principal architects, Sir John Simpson and Mr. Maxwell Ayrton, was not shown to the fullest advantage.

Exhibition buildings of a temporary nature provide exceptional opportunities for architectural humour and bold experiment. The illustration shows the winning design in the competition for a Pavilion d'Honneur and a Restaurant to be built out over the quay of the Seine, near the Pont Alexandre III. in connection with the International Exhibition of Modern Decorative and Industrial Arts, Paris, 1925. The pavilion is to house a few outstanding exhibits from Great Britain. The construction is to be timber framing on a brick base, the walls being plastered inside and out. On the outside the slightly irregular plaster surface is to be toned to a warm white. Colour will be concentrated on definite features of the building, such as the entrance doorway, the north and south niches, the under sides of the cornices, and the lantern. Bright red tones will predominate in a gay scheme, and the tints will be taken up in the stripes of the canvas on the restaurant roof. The niches round the doorway will contain figures designed by Mr. Eric Kennington, and modelled decoration by



Robertson and Easton, Architects.

BRITISH PAVILION FOR PARIS EXHIBITION, 1925.

Facing p. 128.

Mr. Aumonier, working in co-operation with the architects.

The pavilion will certainly reflect credit on Great Britain; it is informal but dignified, and represents a break-away from the traditional "gingerbread" temporary exhibition designs. In the past we have adopted either mere reproductions of classical features, which should make an appeal of solidity and permanence, instead of symbolising lightness and transience; or the buildings have been faced with incrustations of jumbled ornament, and have failed to present any thought-out architectural unity. It is interesting to note that the tendency is to use warm colours—red, orange, yellow—for recreational work, and the cooler shades—green, blue, violet—in designs of a more restful and pensive nature. Whether these qualities are emotional or quasi-scientific is disputable, but the present respect for colours as units that blend or contrast, while preserving their own character, is distinctive and lively, and in its extremes might be compared with mosaic effect, as opposed to the indeterminate tones of a fresco by Puvis de Chavannes. But colour, while it may bring out the beauties of a good design, is not capable of transforming a bad one any more than brilliant orchestration can redeem music that is fundamentally bad, and to that extent colour, even when rightly used, may become a snare; it is the design that matters most, since errors in colour can, as a rule, be rectified, while errors in design are irretrievable.

The touch of comedy introduced into this pavilion is crystallised in the dainty lantern, which fulfils the treatment suggested by the windows. Such features—lanterns, belfries, and cupolas of light construction—will assert themselves in coming work, more

especially owing to the prohibitive expense of steeples and towers. Hence we shall find them, often executed in timber and covered with copper or lead, or constructed of open wrought ironwork, in churches, schools, sanatoria, and sports pavilions, providing what might be called a touch of abstract architecture—severe or whimsical as occasion demands.

Semi-open-air restaurants, band stands, sports pavilions, and the various “marine” enclosures of seaside and watering place, all clamour for care and ingenuity. Oxford and Cambridge have each provided a notable lead here, in the brilliant little Sports Pavilion built for University College, by Mr. Clough Williams-Ellis; and in the New Baths for St. John’s College, Cambridge, where the wall treatment, broken only by octagonal windows, shows how the architects, Messrs. Alfred and Kenneth Cross, proved a functional necessity to be an architectural virtue. Gardens and parks are generally well laid out, for the Englishman is at his happiest with trees and flowers in the country. There remain, however, many opportunities in definite street work. The newspaper kiosk can be an asset, also the more rare verandah restaurant; even subways can contribute a special quota with gaily tiled wall surfaces; we hope that the omnibus companies will give us some more bus shelters, but we also hope that if they do, these will be well placed and designed. The pleasant influence of certain motor-oil supply pavilions might be extended. Flood Street with its new buildings, including the side façade of the fine brick warehouse of the Wolseley Motor Car Company, and other corners in Chelsea offer welcome oases in unpromising surroundings. Cheerful awnings are hardly architecture, but if Peter Pan can be coaxed to town, these and

many other symptoms will reappear to welcome his return.

It may seem anomalous to include a War Memorial among examples of recreational architecture, but the spirit that honours its dead in considering the living is old and acceptable, and, in the Hoppers' Memorial at Five Oak Green, in Kent, the architect has acknowledged the monumental significance while answering the practical demand. The original nucleus was an old public house that had already been converted into a hospital for hoppers' children; the new building forms a quadrangle on the front and sides of the open ground between the hospital and the road. This provides a covered cloister where the hoppers can sit at night in all weathers, enjoying their fun and the strains of a barrel organ. Such a loggia treatment, introducing the touch of the French café, should be well adapted to country inns generally. The work was carried out by direct labour, largely covered by the pennies of the hoppers, and comprises only the simplest elements. The Memorial inscription, framed in panels of coloured plaster in the form of intertwined hops, provides an apt climax to a work of practical value and sympathetic intimacy.

Apart from such democratic expressions, there is still scope for the personal element—for architecture in its abundance. The student must often feel that the magic legend "a wealthy client desires . . ." in the set-out of a subject for study is likely to be the only contact he will ever have with that rarity. Fortunately not only wealthy clients, but clients of good taste, are sometimes to be discovered, and it is for them that the architect can execute some of the most sympathetic of recreational work. If there is

any peculiarly new tendency in such expression, it is likely to be shown in eclecticism. All the traditional influences will be invited to contribute where they apply, and thus Italian, Dutch, Japanese, or Pagoda details will play an appropriate part. The distinctive charm of ordered formality has not yet deserted recreational architecture, even though it has flitted from the garden, and thus a surviving link with tradition is preserved. The researches of Miss Rohde* have helped to remind us that order was the essence of the medieval garden. Its original was a place actually fenced off from the wild; its character was thus that of a protected area of cultivation, and its decoration depended upon studied artificiality contrasted with the dangers outside. The small criss-cross raised beds, often of coloured earths and sands, displayed the minimum of flowers. We can trace the development of this civilised formality through the foreign and English Renaissance; but, if the horticulturist has since broken away from imposed restraint, and now revels in landscape and rockery, the architect can still unite this freedom with the old order, and thus continue a unity too valuable to be lost. In our modern reverence for nature, let us not forget that to the artist there is all the difference between the primitive and the simple; the primitive abounds in crude if indeterminate complications, while simplicity to be sincere must be born of selective experience. In appreciating this distinction he can evoke the spirit of grace, that most wise if artless muse.

The Sunk Garden at the Châlet du Bois, Le Touquet, carried out for Lord Dudley, illustrates a disposition

* "The Old English Gardening Books," by Eleánor S. Rohde (Martin Hopkinson).



G. D. Gordon Hake, Architect.

MEMORIAL AT FIVE OAK GREEN.



A. B. Llewellyn Roberts, Architect

SUNK GARDEN AT LE TOUQUET.

of common materials united in a pleasant formality. The house is an enlargement of an existing cottage. Variety is introduced by the contrast between brick and plaster in the main walls, by the free use of tiling in pier, arch, and roof, and by the introduction of rough marquise stone for the dwarf walls. The garden, executed by Messrs. Cheal and Sons, of Crawley, tactfully combines architectural detail and gardening skill.

In concluding this short allusion to the lighter architectural forms that are moulding rather than following a general impulse, may we surmise that the movement symbolises a convalescence, if not recovery, from the post-war decadence of restless scramble?

CHAPTER XIV

THE TOWN AND THE CITIZEN

IN considering the architecture of the church we give precedence to the clergyman, since he may be said to hold a definite view on architecture, and it is, therefore, possible to face and understand this view, and even to suggest how it may be modified and adapted to the general tendency in the new architecture. The citizen, on the other hand, as expressed in his city, holds no particular views. He is merely apathetic. We will, therefore, first consider very briefly how the problem of town development is being approached, and then return to our existing towns, as the citizen makes and uses them, and ask ourselves whether anything can be suggested to render them more habitable and less unattractive.

Town planning* is now recognised as a science of the first importance, but the subject is so vast and complicated that only a vague outline can be attempted here. Briefly, it aims at designing the main lines of development before a single new building is erected, and thus eliminating the haphazard element with its inevitable waste and inefficiency. It means forethought on communal lines in the place of opportunity on individual lines; it involves consideration of the present and future

* "Town Planning and Development," by S. R. Adshead (Methuen, 1923); "Towns and Town Planning," by T. Harold Hughes and E. A. Lamborn (Oxford University Press, 1922).

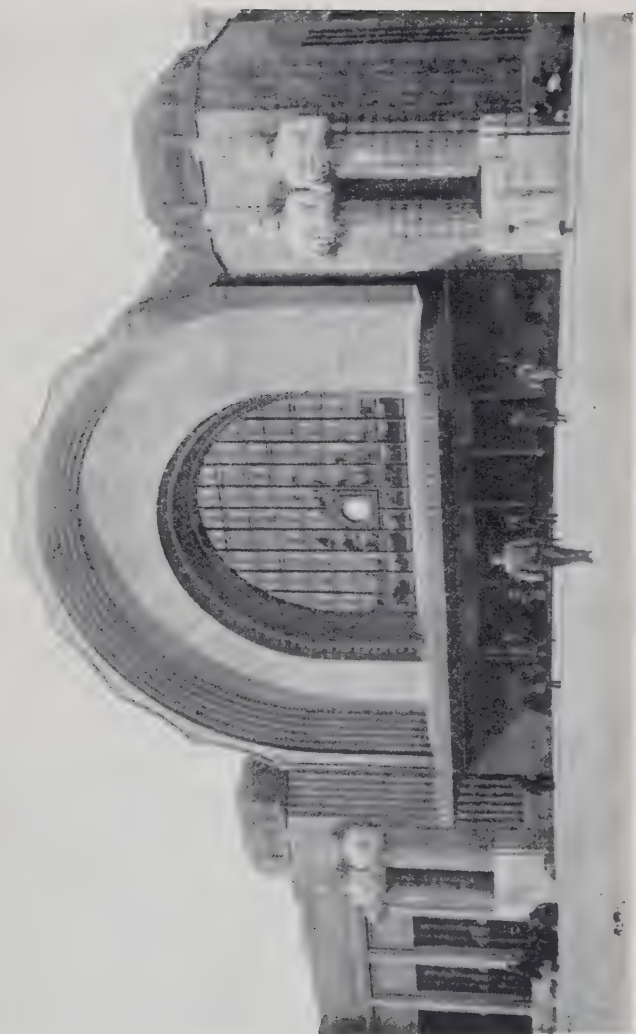
requirements of traffic and services, by the provision of adequate margins to roads that may require widening later on; it supplants the old system which makes them too narrow in the first instance, and only convertible later at fabulous cost; and it also counters the opposite extreme of laying down unnecessarily wide metalled roads to serve only a few houses. By such foresight exploitation and congestion can be avoided, and instead of the tyranny of unregulated individualism we shall be able to achieve freedom through order. The manufacturer would be free to develop his industry in co-operation with other industries, and his neighbour would no longer be free to behave irresponsibly and introduce chaos.

Traffic congestion in a great city results in such complications as the future of Charing Cross Bridge and Station, demanding changes that must involve enormous expenditure. The larger stations throughout England are neither well placed nor considered, and since transport represents the arterial system of social life, we may regard the railway station as the particular building that epitomises its importance, and pause to consider here how it can fulfil its architectural mission.

America, Germany, and Finland have made good use of their opportunities in the planning and design of the railway station; but in this country we have not of late years had the scope to show what we can do. A successful station design should take the form of a portal into and out of a city, and the engineering practicality of the railway can be translated with a certain restraint or even severity in its architectural form. The colossal entrance to Euston Station certainly provides a portico, but it is a portico imposing out of all proportion to the interior of the

station; to go to Euston is like entering a local post office through the Marble Arch. The new Memorial Entrance to Waterloo is more satisfactory, and in itself appropriate, but the surroundings are so dingy, and the site so cramped, that there was no opportunity there of providing anything on the foreign scale. The station at Helsingfors is placed at one end of a large open space, and full advantage is taken of its situation in an original design of vigour and solidity. The entrance is a huge and deeply recessed arch, the lower part of which unfortunately is hidden by the canopy that is essential to protect arrivals from the weather; on either side of the great arch are two stolid colossi, reminiscent of Easter Island. One may or may not admire these figures, but the whole effect is imposing in its audacity, and one can only wait until we get a similar opportunity in England.

In smaller work we find in our tube stations an attempt to make them look tube-like on the outside, but the stations are older and not nearly so good as the posters; it is to be expected that the companies concerned will find means of introducing more real design and colour into new work. The wayside station in England is almost invariably a platitude of sheer horror, the exact counterpart to the villa. If the designs had been straightforward engineering they would have been far better than the penny-in-the-slot "beauty" that the railway companies adopted. We can only trust that when small stations come to be built or rebuilt the great group companies will recognise their responsibilities, and introduce a new outlook that will respect local significance in a type of building fitted to its purpose and importance.



Gesellius, Lindgren, and Saarhien, Architects.

RAILWAY STATION AT HELSINGFORS.

The provision of roads, railways, and canals, where required, will link up towns and whole areas of England, and will intimately concern the future of industry. "Zoning" regulations will be drawn up to ensure that factories of different kinds shall be suitably placed, and residential districts kept as free as possible from industrial noise and smell. A town plan fixes how many houses are to be built to the acre in various districts, where the shopping centres are to be, and where parks and recreation grounds are needed. In short, town planning translates into fact the ideal of social development which has persisted in men's minds since the beginnings of social history.

Large areas are already included in such schemes, and it is to be hoped that gradually the whole country under the new compulsory regulations* will be co-ordinated on the broadest lines, and the wasteful ugliness of fortuitous methods finally abandoned. Not only the natural resources of a district, but the habits and psychology of the inhabitants must be known and understood. A tactless reformer may be a good pioneer, but he is never a successful organiser, and, unless the town planner can prove that the advantages he has to offer enormously outweigh the inevitable inconvenience of a change, he will not get the public to work with him. Every innovation and change of direction is going to hit some person and some interest, and, unless conciliation is shown as well as justice, enemies and

* Under the Housing, Town Planning, etc., Act, 1919, as amended by the Housing, etc., Act, 1923, every borough or other Urban District with a population exceeding 20,000 must prepare, and submit to the Ministry of Health, a town-planning scheme within six years of January 1, 1923.

bitterness must be created. The town planner occupies, then, the position of an architect on a huge scale; he concerns himself with the individual buildings only in so far as they affect the lay-out and arrangement of the district, and he is liable to the same dangers that beset the architect in translating a small scale drawing on paper into a three-dimensional entity, for in planning his town he must give full consideration to levels and to the height of buildings to be allowed in zoned areas. Town planning is, therefore, essentially a practical science, but to be successful it must, of course, pay due regard to architectural effect. Practical considerations, such as traffic routes, contours, levels, aspect, and prevailing winds, generally rule out the plan that looks symmetrical on paper, and in any case a plan of this kind would give no such effect in reality. The Round Pond in Kensington Gardens looks splendidly symmetrical from an aeroplane, but presents no appearance of symmetry or design to anyone standing on the bank. The town planner has therefore to be constantly on his guard against "paper symmetry." His tee-square prefers to draw straight lines, and his compasses exhibit a leaning towards circles. Neither straight lines nor circles are to be found in nature on the grand scale, and the mathematician has invested them with undue importance. That there is a fitting use for them in architecture and town planning is evident, but the designer must see that each arises from his own deliberate choice, and not from the easy preference of square and compasses.

The disparity between the drawing and the actual town plan or building arises not only through modifications introduced by differences of level, but

through the dramatic or surprise effects obtainable by changes of direction or sudden asymmetry in a building—changes that would have no significance on paper. No one, for instance, in designing Magdalen College, Oxford, on its flat site, would purposely place the tower out of line with the main quadrangle, or would plan the High Street on a curve, and yet such unpremeditated touches add character to a town or group of buildings. The Garden City movement has sometimes gone too far, and used curves without reason. One might say that since a straight line is the shortest route from one place to another, it should be used, except where there exists a reason, however slight, for using a curve.

Town planning was at one time looked upon with some suspicion by the architect, since he feared that it might lead to regimental standardisation and the passing of the element of surprise. These fears have proved unfounded where town planning is properly undertaken. Prussianism intervenes only when the square and the compasses have taken over the design and the plan has become a pattern on the paper. The title "town planning" is perhaps misleading, and "district planning" more truly descriptive, although it will be seen that even this is hardly adequate, since one district cannot plan its roads, railways, and services, without working in with neighbouring districts on all sides. Planning on so vast a scale as this has never been undertaken in any detail, although the network of Roman roads in Britain represents a carefully thought-out scheme. If those astronomers are right who believe that the markings on Mars represent irrigation canals made by intelligent beings, we have in Mars "planet

planning," and anything short of this is really incomplete.

To return to earth; town planning obviously affords wonderful opportunities for working out schemes to harmonise with nature, for a town should look as though it were part of its surroundings rather than something dropped down ready made. The unusually dramatic quality of modern architecture renders it especially adaptable to mass effect. Vista, climax, and massing are introduced on a scale hardly possible before, except in such isolated instances as in Paris and Versailles. Sweden is playing a leading part in design on the grand scale, and those architects who visited the Gothenburg Exhibition in 1923 have described the dramatic grouping of the buildings. Our own Exhibition at Wembley, while it marked a great improvement on our former practice, would have been still more successful if the great axial avenue leading up to the Stadium had been kept clear of buildings and thus dominated the design.

Only in such exceptional cases as Canberra and Delhi is it possible to sit down and design an entirely new town with huge civic buildings, and in England we have to content ourselves with work on the scale of the two Garden Cities at Letchworth and Welwyn, and with large housing schemes such as the Hampstead Garden Suburb and the London County Council scheme at Becontree. For many years, however, our urban population will have to carry along as best it can in inconvenient and overcrowded towns, and all that we can do is to apply the principles of order whenever a chance offers. But it is not only to structural changes that we must look for an improvement; whereas these must take years

to develop and cost millions, we can effect a small revolution at practically no expense if we only feel properly ashamed of our present surroundings.

Tidiness is the least inspiring of the virtues, if it be a virtue at all; but there is a profound difference between the untidiness of the man of genius and the sloth that means loss of efficiency and self-respect, and which is numbered with the seven deadly sins. It is a form of mental degeneracy: in a regiment it means lack of discipline; in a firm, bad management; in a town, public apathy. The untidy man who loses his collar-stud is a bore, but the slothful farmer who allows his land to run to thistles is a public pest. While it may be doubted whether extreme tidiness be a vice or a virtue, there can be no doubt that our extreme civic untidiness is a vice well deserving the crusade that has been launched against it by Professor Lethaby, who sees in it one of the most degrading symptoms in our national life, and a deadly enemy to architecture.

It is difficult for the architect, or the man who notices things about him, to realise how blind the average Londoner has become, and that he sees nothing unless, by the sheer blatancy of vulgarity, some advertiser hits on a new "stunt" that forces the passer-by into a momentary gape. Toleration of offensive and unsightly advertisements is one of the outstanding symptoms of public sloth, for it is the attitude of the public that alone makes such eyesores not only possible, but commercially effective. The support given to Lord Newton's efforts shows that another public is being formed, and its duty should include an appreciation of the good advertisements now appearing on all sides, as well as a hostile boycott of the wares advocated in those

that are offensive. One does not suggest that the action of the motor spirit companies in removing their roadside notices was due to public indignation, but public disapproval must at least have assisted them in explaining to their shareholders the scrapping of so much capital. In a recent book review it was stated that "except where there is little or no competition, as with railway companies, the essence of an advertisement is that it should not harmonise with its surroundings." Such a statement is fundamentally wrong, and implies an acceptance of our present degradation as though it were based upon an eternal truth.

An instance of sloth is the disgusting habit of placing cylinders of garbage, generally uncovered, along the street pavements, to be emptied into refuse carts at the hour when business men are setting out for the day's work; our butchers and fishmongers expose perishable food at the mercy of this refuse-laden wind and swarms of flies—a perpetual source of wonder to foreigners, and a contradiction to the reputation we have earned as leaders in sanitation.

Whereas local authorities are always eager to house themselves in buildings of architectural pretensions, yet the same authorities, having paid this tribute to architecture, forget that a palatial municipal building in a sordid setting is not a good advertisement to local administration. Napoleon satisfied his ambition for personal superiority by posing as the only badly dressed man in a resplendent court, and some of our local authorities might borrow from his dramatic instinct. But we cannot expect local authorities or Parliament to legislate ahead of public opinion (this, for some obscure reason, being regarded as a capital mistake), and so long as our public

bodies know that those whom they represent hold no views about architecture or civic amenity, so long will they continue to ignore these things. The initiative must lie in the hands of the ratepayer, because not only is he the only man who can stir up the local authorities, but also because the individual house is the unit of town life. Mondays must no doubt be consecrated to the family washing, but such features as tool-sheds, rabbit-hutches, and spindly wireless supports might be erected with some sense of decorum. Pride of home should be innate in everyone, and although it is obviously straining the point to expect anybody who lives in the normal monotonous terrace to be exactly proud of his house, still he might mend the tumble-down fence, and spend a little ingenuity in making his own section of the terrace spruce and as pleasing as small adventitious aids can make it, which is not expecting much.

The Church Street, Kensington, Guild has set a fine example of what can be done by a voluntary association of shopkeepers, each contributing by co-operation towards general harmony and dignity, and exhibiting pleasing signs and good lettering. Some sort of co-operation is likewise needed in the terraces of better-class stucco houses that abound in London and that are each designed as an architectural whole, often forming the sides of a square. The individual houses in these terraces are painted at different times, in slightly different tints, and the architectural design is thus lost when it might be accentuated by the adoption of a definite colour scheme for the terrace as a whole. This is not to suggest that stucco surfaces requiring constant repainting are suitable or desirable in a smoky town, but as we have them, let us enjoy harmony in spring painting,

as well as the gaiety of revived porticos and refreshed railings. "Eyewash" has its reward, and a district is found to respond to its coat of paint as readily as does a man-of-war. It is not "swank" that keeps the shine on the British Navy; the brass, the decks, and the paint are symbols of efficiency, and English seamanship owes much of its reputation in emergency to the order and polish of its everyday surroundings.

Democracy and tidiness may or may not go together. The fragments that remain after Bank Holiday on Hampstead Heath, and the breakages bill at the Savoy after New Year's Eve, argue that they do not, but, on the other hand, the amazing success of the movement that has eliminated from London the vile habit of spitting indicates that the public is capable of learning a lesson in decency. The corresponding success of the "Safety First" campaign inspires the suggestion that it might be followed up by a series of "Cleanliness Next" posters. At any rate, those in control should remove the reproach that they have never made a serious attempt to inculcate civic pride into the masses.

CHAPTER XV

OTHER ARTISTS AND ARCHITECTURE

THERE are many gaps in our language, and of these none is more remarkable and inconvenient than the lack of any word to define the man who, in popular language, is known as "an artist." An artist is really one who practises any of the arts, and the word also bears a wider interpretation, and includes, not only the creative artist, but anyone deeply responsive to any of the arts. It is in this fuller sense that the word is used throughout this book. The art often described as "painting" includes engraving, etching, pastel and pencil sketching, pen-and-ink drawing, and numerous other media besides painting; and since we can find no single word that embraces all these art expressions, let us agree to speak here of pictorial art and the pictorial artist. In common use the word "art" and its derivatives have lost their original significance; the word "artistic" has been degraded into a trade tag, and now suggests something foppish, affected, and silly. To speak of an "artistic" house is to imply a structure of "gingerbread" lacking in architectural quality, and "the artistic temperament" is the recognised justification for cranky selfishness and affectation. Were it possible one would like to abjure the word "art" and all its derivatives, and coin a new expression free from prejudicial association.

The fellowship of the fine arts is not the intimate

community that common misfortune and natural interdependence might lead one to expect. The members are mutually polite, but not friendly, and the practitioners only know as much about each other's work as is strictly necessary. Sculpture can claim the nearest kinship with architecture, since these two arts are often merged into one homogeneous whole. The sculpture and carving are as much part of the Parthenon, Wells Cathedral, and St. Paul's as are the steps and columns. This interdependence is often a source of embarrassment to the sculptor, because if he is designing a group of statuary for a position, say, 50 feet up on the face of a building, he has to allow for the foreshortening and generally adapt it to its future surroundings, and it will therefore be unsuited for exhibition where it will be viewed at close range on the level, but he is nevertheless expected to exhibit it. Likewise a piece designed for exhibition will lose its intended effect if subsequently perched upon a triumphal arch or a lofty parapet selected by the Mayor and Corporation. It is wrong to treat sculpture as an isolated feature regardless of its architectural surroundings and of scale; anyone can see the futility of placing the small statue of George Washington in front of one of the corners of the National Gallery. Mr. Gilbert Bayes, in addressing the Architectural Association, illustrated our want of thought by citing the statue of Sir Henry Irving that stands behind the National Portrait Gallery; instead of occupying the focus of interest, say, in a small garden, it is set down negligently on a bleak triangular expanse of asphalt, like a bottle on a table.

Turning now to pictorial art: when this is introduced into architecture through the fresco, the

mosaic, and the stained-glass window, it is more than applied ornament, and although not structural, yet it should form an integral part of the design. Architecture, painting, and colour-work generally will in the future find greater opportunities for co-operation. The tendency in modern buildings is towards great expanses of plain surface in concrete and plaster, and these will admirably lend themselves to colour effects outside and pictorial decoration within. But the architect is himself compelled to use a form of pictorial art, because he cannot design without pencil and paper, and he may easily lose his identity and become a pictorial artist; his architecture then suffers because he falls between two stools. Many an architect, delighted with the balanced beauty and charming rendering of a plan, as seen on the drawing-board, has found that in the solid the balance has disappeared, destroyed by the scale; when the walls are built the ground plan is no longer distinguishable, and the rendering that embellished the drawing is not present to palliate weaknesses. The drawing-board, tee-square, and compasses must be rigidly kept in their places.

The most satisfactory pictorial rendering of a completed building is an untouched photograph, taken from a suitable viewpoint, because there is present no art medium to reinterpret the building's actual appearance. Perspective drawings, essential though they are to the architect in the preparation of his design, are yet indifferent guides, and often positively misleading, in indicating what a building is really like. When dealing with works not yet erected, they are the best we can do, and it is wise in illustrating the building's proposed appearance to aim at keeping the drawing as "photographic"

as possible, and to restrain an instinctive desire to produce a pictorial work of art. The difficulty in preserving a distinction between an architectural drawing as a pictorial work of art and as a presentation of architecture is of necessity insistent at an architectural school, where the pupil does not learn from the solid (as he did, however indifferently, under the apprenticeship system), and where practice and proficiency in draughtsmanship denote a definite standard of training. The exhibitions in which school drawings are seen and compared emphasise the importance of the drawing, and the prizes for students largely depend upon skilled draughtsmanship; while the healthy increase of inter-school and international exhibitions of students' work impart a virtue to pictorial proficiency that may well prove mistaken. The aim of architectural training is to teach the student to see in the solid, and so to be able to create in three dimensions, and when pictorial effect becomes self-contained, it is a positive danger to architectural progress.

That this pit for architects has been digged the deeper by other artists is demonstrated by the Royal Academy Exhibitions, and the attitude of the most authoritative art body in England. The "architectural room" does not only include representations of completed buildings, but also of those to be erected. This of necessity admits the beautified perspective, and architects who wish to give their works the best chance of acceptance have to employ some well-known and capable perspective artist to "render" their subject for them, unless they are exceptionally brilliant as pictorial artists themselves. The Royal Academy authorities only set aside a miserable corner for architectural exhibits,

and it is natural that they should ask for those to be presented in as popular and as tangible a form as possible, but to call the exhibitions representative of British architects' work is misleading; they represent admirable renderings of buildings, renderings so adroit that weaknesses are concealed, and the surroundings either purposely omitted or coaxed into harmony. Such methods neither encourage the architect nor help to instruct the few members of the general public who, in the quest for a little peace and quiet, penetrate into the architectural retreat. Many architects will agree that it would be healthier for architecture were it not officially admitted at all, and if the water-colours of architectural subjects were included in the water-colour section of the exhibition. They rank high as examples of pictorial art, and should find their place as such.

The Architecture Club wisely restricts itself to photographs and models in its annual exhibitions of current work. Models are, of course, far more satisfactory than perspectives, but they are expensive, and can never take the place of drawings in general practice. But even models are not so interpretive as many suppose. The scale of a building, both in itself and in relation to its surroundings, is an integral factor in design, and it requires training and imagination to visualise the building itself. The perfect scale of the interior of St. Paul's makes it more impressive than St. Peter's at Rome, which is enormously larger, but less satisfactory in scale. If we except the large body of architects who stray beyond the confines of their own art and produce pictorial work, generally of architectural subjects, we may say that the architect is not pictorially creative, but only uses pencil and paper from necessity.

The professional pictorial artist owes an immense debt to architecture, and architecture to him; buildings have played so prominent a part in the world's greatest pictures that this need not be emphasised. The insistence upon colour work, now a distinctive feature of training at the architectural schools, is a tribute to the influence of the pictorial artist, and the quickened sense of colour appreciation is already to be seen in the architect's work. Passing to another branch of pictorial art mention must be made of the impossible structures, such as unstable arches, that figure so freely in stage scenery, and the quaint bonding and sizes of bricks illustrated in journals—sometimes even in "Mr. Punch's" admirable cartoons.

Classical literature has treated architecture with a full measure of respect, and architecture is to a great extent dependent upon the written word. The art of writing, unlike the other arts, cannot be retained, even in theory, as a monopoly of the professional, because if architects and others are to express their thoughts at all, they must write them down, and the only tribute they can pay is to write them as well as they can. It is a one-sided arrangement under which an architect claims a right to invade literature, but, in the name of architecture, denies that a professional writer should act as his own architect; but circumstances are often unjust, and the distinction between literature and the other arts is fundamental.

The literary artist may claim that the abstract value of his art reaches a higher plane than can be associated with propaganda; but does not the principle that we have applied to architecture also hold good for literature? Ought not the tract and

the pamphlet to form a humble part of literature to the extent that the garden wall and railway station ought to be part of architecture? In so far as they are not, is not this merely because our civilisation has registered another failure? In an ideal world anyone who built anything at all would build according to architectural principles, and likewise everyone who composed an advertisement or wrote a piece of propaganda would cast it in the best literary form available, so that it would take its place as a minor literary creation. But there exists a profound distinction between the two arts; a man who is not an architect can always delegate the architectural treatment of a proposed building to someone else with whom he can work in consultation, explaining in general terms his wishes and requirements; but the architect who has something definite or technical to say cannot successfully hand his thoughts over to anybody else to express for him; the details—the exact phrase and word—assume such importance that they must remain his own creation.

The importance of the hand-craftsman's direct contribution to architectural effect is obvious; and one of the most encouraging features of the new architectural movement is the stimulus it offers to the various crafts; carver, iron worker, tile maker, and potter are all invited to help, but the architect insists that it should be he and not an outside "decorator" who should be responsible for the choice of details, colour, and furniture, when they definitely affect his design. The decorator, like the builder, supplies a need, but the architect should decide the inspiration. Nothing can be more dispiriting to an architect than to find his advice sought on questions of constructional security, or on drains

and hot water, while his client relies on a commercial firm for advice in expensive decorative arrangements. But if the architect owes much to the craftsman for his direct contribution, he owes still more to the indirect influence of handwork upon taste generally. Handling is training, and it is virtually impossible to divorce hand from eye. The great connoisseur who has never handled anything himself is nevertheless the man of natural taste who has devotedly studied the technique of the craft, and can follow the tool in his imagination. Emotion overflowing into an art form without any provocation but a desire to express itself is an intolerable nuisance, and this phase of emotion was largely the outcome of the machine age when men and women accepted the short cuts with which mass production provided them, and in so doing lost the beauty and joy in things that were well made.

Side by side with the returning appreciation of craft work is the popularity of primitive colour. Here we find an ally in the dramatic artist, notably at the Lyric Theatre, Hammersmith. There the crisp gaiety—brilliantly in tone with the eighteenth-century work it pictures—appears artless, but is always sophisticated; it is colour provocative rather than sensuous; it is melody, but it has its discords, perfectly resolved. Reacting from the luscious scenery of conventional productions, the Lovat Fraser effects should form a new habit in colour appreciation. The Lyric schemes may vary, but the demure audacity persists; there is the restrained background, stippled to give it texture, and the marigold, black, and jade. The imported and equally popular Russian ballet is only another phase of the same expression, and although both appear

to be novel, they owe their charm to the intellectual use of the elemental.

Music, alone of the arts, is not intimately connected with architecture. It demands a home, of course, but it need not be an architectural one; a cave would do, and its acoustic properties would probably be better than those in most of our concert halls. The musician in this respect has a real grievance against the architect, but the architect is now alive to his acoustical responsibilities. To trace any parallel between the arts of architecture and music involves complicated and highly disputable processes of thought and far-fetched analogy into which we shall not attempt to enter, but in order to bring home the absence of co-operation between the arts we will examine one particular example of architectural treatment by musicians, and note the standard of pictorial art that musicians utilise as a go-between. The picture is certainly the work of a past generation, but since it is still used without protest we must hold the present generation responsible.

Let us analyse this particular icicle of "frozen music," which can be found on the programme cover of one of the greatest series of classical concerts in the world, and examine what kind of music it is that has been frozen into the solidity illustrated over the page. Let us melt it down again into music, and see what we get; a pseudo-classical composition, played without a conductor, by performers who have never seen their instruments before, some playing in C major, others in B minor, half of them reading their scores upside down. Such is the architecture, read in terms of music, that is set before the public to illustrate in architectural form the musical treat

that is in store. Seeing that the music thus caricatured on the cover consists of some of the world's greatest masterpieces, splendidly performed, how can we account for the amazing discrepancy between cover and contents? If it is argued that the design

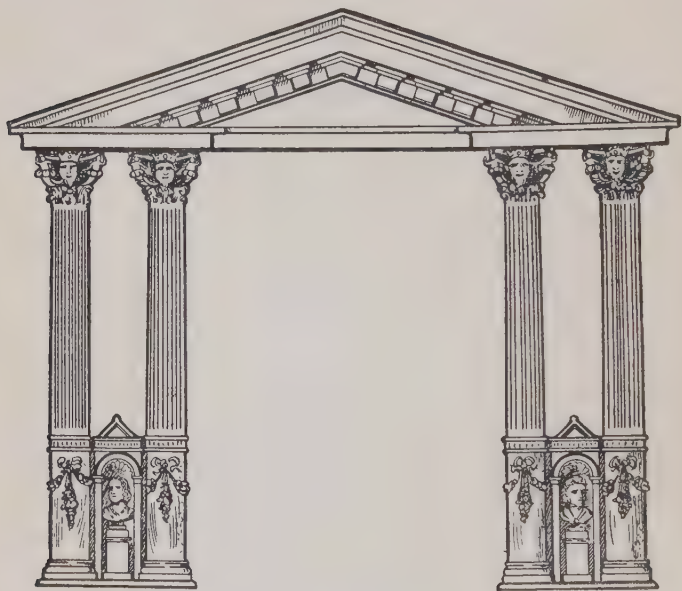


FIG. 2.—A PROGRAMME COVER.

on the cover means nothing, it would clearly be better to leave the page plain, and to rely upon adequate printing.

It is, perhaps, unkind to stress the shortcomings of this device; indeed, to criticise it at all is like hitting a deformed baby, but it is unfortunately a faithful reflection of the musician's attitude to architecture, and one only attacks the image in the hope of arousing the spirit behind it. The fatuity of the design is in keeping with the absurdity of every detail: the shafts are evidently square, and the

designer, having observed that columns are often fluted, no doubt thought it would be a good idea to have flutes here. "How many?" He must have asked himself. His answer (whatever it was) led him to compromise by putting ten on the extreme left, eight on the extreme right, eight on the inside left, and seven on the inside right. Again, take the lines of little beetles, evidently of different ages and sexes, scurrying up towards the flutes. There are eight of them under the ten flutes on the extreme left, six under the eight flutes on the extreme right, eight under the eight flutes on the inside left, and six under the seven flutes on the inside right. Could originality be carried further? Here there is no convention, neither one beetle per flute, nor even a fixed beetle-flute ratio.

The shafts rest on prodigious tins of Keating's of different sizes (no doubt it is they that alarm the beetles), and we recognise Old King Cole in the capitals that support a pediment, if one may so stretch the meaning of a word. It is strange that it does not occur to those who draw such objects to go and look at pediments, of which there are thousands too many in London. They would probably argue that they had as much right to design a pediment as anyone else, and that if theirs was unlike the others, so much the worse for the others. Admittedly the designer of such a cover is entitled to do what he likes as badly as he likes, just as we, his victims, may write down any arrangement of musical notes that may enter into our heads; but herein lies the difference: we cannot make him and his abettors listen to our musical compositions; if we could, they would hear, and hear often, such a concerto as would equal the pediment. They can, in effect, make

us look at their architecture, since we can only escape by staying away from the concerts, or at least refraining from buying programmes.

The principle of illustrating a piece of architecture on a musical programme, thus making one art assist the other, is excellent, and the design ought no doubt to be considered as a compliment. Architecture is called upon to add dignity and to assist in creating a receptive mood, instead of being ignored altogether. Music complains of public indifference and apathy; architecture does the same; and since charity begins at home, one might imagine that these two would sympathise with each other in their common trouble; but it is of little use for music to employ a travesty of architecture. Not only have those musicians in authority sanctioned this no doubt well-meant effort, but thousands have accepted it without protest. If musicians employ this kind of symbolism to prepare an audience for the Choral Symphony, architects might follow suit and help to instil a sense of mysticism and worship into a congregation by playing defective combs in Westminster Abbey.

Probably the man who actually perpetrated this portal to harmony had no more knowledge of music than he had of pediments or draughtsmanship; but the arts are so little interlinked that an architectural Caliban, which would be rejected by a pavement artist, is allowed nightly to confront vast audiences as an example of "architecture." The architect's grievance is not that his own sensitive eyes are outraged, but that, at the very time when so much is being done from outside to interest the public in architecture, she should be caricatured by her own sister.

The musician may retaliate by saying that architects, at their social gatherings, perform indifferent music and treat it as a sentimental background to conversation. Music has a grievance, but it is one imposed by nature. A background of music unquestionably adds to the gaiety of a gathering, but it is injudicious to use serious music for such a purpose; the music, to be suitable, must be light and easy to whistle afterwards. In his four-circled figure the musician who alluded to it himself identified the existence of the second circle, and musicians must recognise that that circle possesses a distinct and legitimate function. It is, of course, unfortunate that so many people should imagine that music has no further significance, but that is only because the bulk of the world is unmusical. Even if the whole world were musical we should still need our musical background, rightly used. Real music is different in kind, and not only in degree, from the popular waltz, but this does not mean that the waltz should be abolished. There is room in the world for Shakespeare and the Limerick, for the oak and the puff-ball. Every art must pay its tribute, in the second circle, to irresponsible gaiety and the spirit of carnival: the architect in the design of restaurant, kiosk, and comedy theatre; the painter in his lighter decorations, and in the poster and the sign; and the musician in life's "incidental music."

Architects are perhaps open to the charge that they take their art too solemnly; but those who criticise must be reminded that in one respect architecture (and sculpture where it forms a part of architecture) stands unique. If a man writes bad poetry or music, or a painter executes a poor picture, it leaves no indelible impress. The bad architect,

on the other hand, actually deforms the world's surface, and the evil he has committed is perpetuated for posterity to the third and fourth generation. The meretricious musical and pictorial creations of sixty years ago can be kept hidden away or destroyed, but we cannot dispose of our rows of back-to-back terraces of houses, our blatant public buildings, or our demoralised suburbs. Can other artists, therefore, blame an architect if, while disclaiming that his art possesses any higher significance than the others, he does claim that it is more harmful to put up bad architecture than to produce bad painting, poetry, or music ?

CHAPTER XVI

IRELAND'S MISTAKE

THE architecture of modern Ireland is little known to the English architect, and still less to the English layman. The few Englishmen who visit Ireland either restrict themselves to the Horse Show, or dart off to remote districts for sport, and possibly see a Round Tower and a church eleven hundred years old. The writer, being himself an Irishman, and married to Ireland, may therefore be allowed to wander for the space of a chapter to the sister island.

At the moment Ireland, architecturally speaking, is influencing England very little, if at all, but the England of the past half-century is influencing Ireland a great deal. Ireland differs from England in country, climate, and people, and if the art of architecture is as seriously considered in the one country as in the other, we shall find two modes of expression, based on different traditions and needs, growing up side by side, and these two forms of architectural development should be mutually helpful and stimulating. At present Ireland is suffering from the atmosphere of architectural apathy that smothered architecture in England during the industrial era, and a candid examination of the position in that country may help to bring home to Ireland the fact that she is on the wrong road. This applies more especially to the small house, concerning which the architectural profession in Ireland is unfor-

tunately as little consulted as it has been in similar work in Victorian England.

Ireland has been provided by nature with exceptional beauties, and few countries in the Old World show so little interference on the part of man. Whereas man's handiwork at Sorrento, on the Rhine, and on the Cornish coast—to take places at random—has enormously amplified the natural attractions of the scenery, and in other places has ruined it, in Ireland man has so far had singularly little effect. What building there is is usually of a neutral character. Ireland is a land of slate and cement, of white villages and cement, of stone (faced with cement), thatch and cement, and cement. Ireland without cement would be like England without brick.

The danger to Ireland's architectural future does not, however, lie in her passionate love of cement, for cement, when varied with limewhite or colour-wash, can lend a peculiar charm to a town or village. The insidious growth that is sapping Ireland's beauty is the infection of "Villa Architecture" that she has caught from England, together with pretentious shop design that emulates the London shopping centre of thirty years ago. It is melancholy to note that when the inhabitants of a town in these islands discover a district of peculiar beauty in the neighbourhood of a town and decide to build their houses and live there, the first thing they do is to spoil it. In natural possibilities the coast road to Howth, to take a definite example, is not inferior to Tivoli or Sorrento. Howth enjoys a magnificent situation, wonderful views, and a climate that admits of almost sub-tropical vegetation. To imagine it clothed with buildings of the simplest character, well proportioned and adapted to their situation, is

to imagine one of the loveliest spots on earth. But what do we find in reality? A chaotic jumble of the worst creations that the perverted taste of Englishmen ever produced. England has an immense heritage to be proud of, but Ireland has recently taken to herself the outstanding object of ridicule which Victorian England achieved—the Villa. One would be grateful to the Free State Government if it would buy Howth, pull down the monstrosities, and build it up sensibly, and so make the inhabitants live in comely buildings whether they wanted to or no. It would be worth a national loan.

But Howth is only taken as an illustration; hardly a single town with any kind of present-day prosperity is free from the disease; it is, in fact, a sign of success to possess outrageous buildings, just as Chinese women point with pride to their deformed and useless feet, and Fakirs exhibit the nails growing through the backs of their hands. In case it may be thought that one is advocating something expensive, it must be insisted that all that is required is straightforward building that shows the mark of real interest. Ireland need not renounce her cement and slate, but she must give up sham half-timbering and all the characteristics that owe their origin to Peckham and Tooting. Ireland has no excuse for borrowing the worst of England's products when the best is open to her, as well as a tradition in architecture that is peculiarly Irish.

Bad architecture results from a wrong outlook in building, and it is absurd to expect satisfactory architecture in Ireland if the "style" is derived from the work of the year 1900 in the London suburbs. Ireland can learn a great deal from the

best cottage work of the past five years across the Channel, since the fundamental principles of architecture are of universal application, but the percolation of "style" from the one country to the other that used to take a hundred years now seems to take twenty-five, and Ireland is copying the worst that England has ever produced. Even now at least half the output of house building in England is terribly bad, and Ireland will have to take care to distinguish between the desirable and the deplorable. Deliberate copying should be avoided; those who build should be guided by what they conscientiously and seriously think is good. To be able to design what is good requires, of course, an architectural training, but to recognise what is good demands only an intensive self-training based upon a recognition that "natural taste" is nearly always bad, and must be regarded with extreme suspicion. No man who has interested himself in Irish eighteenth-century and other well-proportioned work could be so foolish as to build in Dalkey some atrocity merely because, thirty years ago, a misguided creature did the same at Deptford.

Mention has been made of "a tradition in architecture that is peculiarly Irish," and it is important that we should appreciate the general characteristics of Irish architecture, as distinct from Irish archæology, and see how they can be developed.

There are two main lines of tradition visible in the civil architecture of modern Ireland. The first we can trace back to the classical influence of Wren; for, although Kilmainham Hospital is his only well-known work, yet the Four Courts, the Customs House, and the old Houses of Parliament, were all excellent examples of the Wren school. This line

of Renaissance architecture divided later, one branch leading, as in England, to the severe Georgian façade that is almost universal in residential Dublin, and appears also in Limerick; and the other line, strongly reinforced from Italy through the agency of travelling Italian artists, leading to the granite mansions and public buildings, and to the well-executed granite details, such as doorways and mantelpieces, that are often found in the most unexpected places all over Ireland. This tradition carried all through the nineteenth century, when little of corresponding value was appearing in England. The Dublin suburb of Victorian date is astonishingly superior to its London counterpart; the Georgian feeling never disappeared, and we find plain brickwork, dainty fanlights, well-proportioned doors and windows, and architectural treatment extending to the semi-detached house. These considerations make it the more tragic that Ireland is now busy exchanging her beauty for the ugliness that England has decided to discard.

Side by side with this more fastidious work is the freer native style that has the same common ancestor as the castle keep: the compact rectangular block with asymmetrical openings, plain, uncompromising, and roofed with slate laid to a low pitch. The main characteristics of this rectangular type are blunt and Puritanical; the eaves project hardly at all, the roofs are unbroken by dormers, generous granite steps bridge the half-basement area, and the walls are plain expanses relieved only by the window openings; often some cut granite details will testify to the Italian influence. Until quite recently this traditional directness characterised the vast bulk of Irish buildings outside Dublin—almost all, in fact,

excepting those where more money was available and where the Italian influence predominated. These twin traditions are there for development to-day. Monotony can be avoided in the buildings of the "rectangular" type by a lavish use of colour-wash on the walls, by introducing brightly painted woodwork, including outside shutters, porches, and verandahs, and by the judicious use of shadow obtained through projecting the eaves. The Italian tradition in its full glory of terrace gardens, balustrades, and lofty rooms with painted ceilings, is financially out of reach, but little touches of architectural detail finely executed in granite will serve to remind us of past splendour, and can continue to play their part in relieving the otherwise excessive austerity of the rectangular block.

The Northern European tradition of the gable and half-timber that dominated Elizabethan England* never entered Ireland, and we cannot transplant this now. In England, where expense forbids the genuine timbering, the Elizabethan touch has been reintroduced by the speculative builder in caricature, composed of shams and inaccurate imitations calculated in general appearance to ape Tudor work. Irish architecture is doomed if Irishmen follow England's lead and build travesties of a great period without even England's excuse for doing so.

Ireland, as we have seen, is a land of cement, and cement must continue to play a large part in our architecture. That there has been a hidden hand behind the cement is obvious—someone in authority must have suffered from a cement complex, perhaps

* Sir Walter Raleigh's house at Youghal, now known as "Myrtle Grove," is an exception, and represents the influence of a local Elizabethan settlement.

held cement shares, otherwise it is impossible to explain the square miles of perfectly good and weather-proof stone walling that have been "dashed" or cemented. The Irish stone-mason is a fine craftsman: his method of random coursing is characteristic and effective, and any official regulation that may exist to enforce the promiscuous cementing of stone walls should be reconsidered in the light of common sense. The half-round cement wall coping, cracked by the frost during its first winter, and so dearly loved by local councils, should give place to copings of cut stone, random stone laid on edge, or solid cast and throated concrete blocks.

Ecclesiastical tradition is virtually non-existent in Ireland, since the more pretentious of the nineteenth-century churches and institutions, which in Ireland form the large majority of such buildings, are rather imitations of Gothic mannerisms than examples of architecture. But among the humbler places of worship are to be found little limewhited chapels, perhaps with cut granite quoins and belfry, that possess character and recall similar buildings in Italy. Although architecture and archæology should be kept separate and distinct, yet the one can often learn from the other, and it may be hinted that Celtic patterns and devices can find a place in modern Irish ecclesiastical architecture through the use of reinforced concrete, which, as we saw in the chapter on coming church architecture, is admirably adapted to delicate tracery. The one really constructive native style—the Irish Romanesque, closely related to Norman, but with its own detail—has long ago been abandoned to archæology. It is a style peculiarly appropriate to the country and its resources, and although mere reproduction could lead

nowhere, yet such inspiriting modern work as the little church at Lusk, near Dublin, designed by Mr. John J. Robinson, shows how local tradition can be revived in the spirit of the present day.

The arts and crafts in Ireland are at a low ebb, but it is a hopeful sign that an art course has been instituted in a Free University under the guidance of Count Plunkett, whose course covers the whole field of Irish architecture and the allied arts. The Free State Government has great opportunities for encouraging the arts and crafts that can add so much to the beauty and attractions of the country, both to visitors and to Irishmen themselves, and can present activities of absorbing interest to progressive minds. But Ireland must also remember that her architecture cannot live a self-contained life. The mistake she is now making is that she is learning the wrong lesson and copying the worst instead of the best from across the Channel.

The extent of the reaction of a social upheaval upon art cannot necessarily be predicted, and in Ireland we see an old civilisation starting anew. A nation's independence, in its full sense, relies upon the development of its cultural responsibility; we may be sure that the coming Ireland will not rest content with the Puritanical frugality of its older cottages and streets; for inspiration it would do well to turn again to the South European spirit of selective exuberance from which it can learn so much, and thus enliven the old work as well as enrich the new.

CHAPTER XVII

HOUSING CONSTRUCTION

“ ‘Jinnee,’ said Aladdin, ‘I have all the reason in the world to commend your exactness in executing hitherto punctually whatever I have asked you to do : but now, if you have any regard for the lamp your mistress, you must show, if possible, more zeal and diligence than ever. I would have you build me, as soon as you can, a palace over against and at a proper distance from the Sultan’s, fit to receive my spouse the Princess Badroulboudour ; I leave the choice of materials to you.’ ”

IN almost every gathering of people implicated with politics or housing, someone “in the know” will whisper that, unfortunately, he cannot tell us his secret, but that it is something stupendous—something that will instantly revolutionise house building. It has taken us years to realise that talking and magic methods are no good, but that we must settle down to hard work and hard facts if we are going to solve the housing problem. Above all, we must keep it out of the orbit of party politics. The American journal *Housing Betterment* (February, 1924) sums up a discussion on our English methods with the conclusion: “The way *not* to solve the problem in the United States is to make it a political issue.” It is astonishing that we, who have rather prided ourselves upon our detached housing outlook, should be pointed to as a *mauvais exemple*, but it is a lesson that we ought to take to heart, since good-will and co-operation between all parties and classes alone can enable us to make headway. One can state

definitely that brick is, and seems likely to remain, the most generally satisfactory material for building houses, but supplementary methods have their place.

Let us begin by examining some horribly hard facts, giving precedence to transport. Transport is one of the main factors in cost, and its elimination, as far as possible, one of the first necessities for cheap building. The point need not be laboured, for clearly, on a gravel site, concrete, whether in blocks or poured into moulds, presents itself as the obvious method of building, especially if bricks have to be brought from a distance. But let no one imagine that we possess in concrete a royal road to cheap house building. It is only where transport is reduced that concrete becomes economically practicable. Where this condition exists concrete should be more widely used, not only in walls, but in floors and roofs, thus saving timber, slates, and tiles.

Proper organisation is essential, and here we must learn from the speculative builder, who has brought this feature of his work almost to perfection. The stages by which houses are run up, the order in which the gangs of men follow one upon another, the positions where materials should be dumped, and their distribution, form a small science that would be well worthy of a treatise written by an expert. This question of organisation is of paramount importance, and yet it cannot adequately be included in any statement dealing with a new method of construction or a new use of materials. If we gave as much attention to mass organisation as to mass production and strange materials, we should gain real economy, without making any other alteration in our procedure.

Our methods are more strongly influenced than

most of us realise by our damp but relatively warm climate. The 11-inch hollow wall (and its concrete equivalent) is ideally suited for our conditions, but in Canada it would give insufficient protection against the intense cold. May we not learn something from the Canadian practice of building in "brick veneer"? It consists of a wood house cased in a $4\frac{1}{2}$ -inch brick wall, separated by an air space. This method secures the warmth and comfort of the timber house with the weather-proofing qualities of the outer brick wall; at the same time it overcomes the greatest objection to timber—its liability to fire that may spread from house to house. Where timber is used, dry rot must be guarded against, and previous experience with tenants warns us that many of these houses would certainly become verminous.

Housing has quite enough legitimate troubles of its own without the introduction of the bug. Well-kept houses, however old and however full of nooks and crannies, do not harbour bugs, and if, as we always hear, tenants respond to better conditions, is it too much to expect them to keep clean? We all know that it is too much, and that many of the houses would soon be infested; but the tenant should be held responsible for the appearance of bugs, and for the expense of clearance when they do appear. There are many clean and responsible tenants awaiting houses, and it is unfair for them to go on waiting, while the new houses are allowed to become infested through the culpable negligence of the occupiers. A rigid system of inspection, and powers of eviction in the worst cases, should be instituted and enforced. The prevalence of bugs is a national disgrace, and should be treated as such.

The timber house is found in another form, known

as "the Steel House,"* a system of construction that had its origin in Scotland mainly through the enterprise of Lord Weir. It is essentially a timber-framed house faced externally with steel sheeting. Its efficiency will depend upon the extent to which rust can be prevented, especially that due to condensation on the inner side of the sheet, and also on the methods adopted to counteract the conductivity of the metal, and the consequent temperature extremes within the house. There is a good deal to be said for the devil you know, and anyone building for himself fights shy of erecting a structure that will be a constant drain in upkeep, and that will disintegrate if he forgets about it, or if he and his tenant between them neglect to paint it. If the State or the local authority looked upon housing projects from the purely personal point of view, and asked itself, "As a private individual, should I regard this as a desirable venture?" the values would shift to an astonishing extent. The steel house may prove to be a solution to our most pressing housing needs, and the experiment should be made, but architects will require more evidence than is yet available before they build one for themselves.

The cost and scarcity of skilled labour are so well known that there is no need to dwell upon these points, but it is curious that the methods of construction that require least skilled labour in the usual sense of the term, and practically no transport—viz., pisé de terre, cob, and other traditional methods—have not caught on to any extent. The reason lies probably in the difficulty of ascertaining whether the soil is suitable for building purposes, of finding

* Committee on New Methods of House Construction: Interim Report (H.M. Stationery Office, 1924).

men who understand the local use of the material, and in the initiative always required to deviate from established practice.

Standardisation of plan is, of course, indispensable in any system whereby houses are built by mass production, but the greatest danger appears when local authorities imagine that there is nothing for them to do but to select a "standard plan," decide how many houses are to be built, and build away. If large schemes are to be anything better than eyesores, there must be a reasonable number of standard plans on which to ring the changes. One plan may be enough for a dozen houses, but in a scheme for a hundred houses variety comes of itself if proper attention is paid to amenities. There must be houses for a north aspect, others for a south aspect; there will probably be parlour and non-parlour houses of each kind, and there should be houses suitable for angles and road intersections. Anyone introducing a special method of construction ought to wed his method to plans and elevations of a high standard, efficiently designed by an architect so as to provide adequate variety. One has seen too many leaflets describing new methods introducing villainously bad Victorian elevations and inefficient plans.

The vast majority of the scores of new methods of construction* that have been invented, and often patented, during the past seven years suffer from too much "cleverality." They postulate concrete blocks of outrageous shapes or prodigious weight, and the services of a steam crane have even been demanded to lift the blocks into position. Other

* See the report on the first year's work of the Committee on "Standardization and New Methods of Construction" (H.M. Stationery Office, 1920).

methods suffer from an excessive elaboration of parts. Everything fits together perfectly (if you can lay your hand on the right bit at the right moment) like a jig-saw puzzle. The past few years have shown that we cannot solve the problem of housing by violent changes of method. On thinking it over, is it not obvious that there must be a virtue in the weight and size of a brick that has made it practically standardised throughout the ancient and modern world? To substitute blocks of an entirely different size and shape may be wise when bricks are not readily available, because the advantage gained in the manufacture of concrete and terracotta blocks of unusual sizes may counteract the extra bother of handling and laying them; but the brick is not going to be ousted so easily, and it will remain the standard material of building.

The housing fraternity is by no means a happy family, a point aptly illustrated by "Mr. Punch" while we were under the Labour Government. Mr. Wheatley, the Minister of Health, was shown with a magic lantern demonstrating "the perfect and almost automatic co-ordination between all branches of the building industry in pursuance of my great housing scheme." Unfortunately, through an error on the part of the operator, we were shown a scene of the wildest pandemonium. When it comes to housing everybody throws bricks at everyone else.

We find one-half of the community stating that a policy of "ca' canny" on the part of the men has caused the present crisis. It is said that the trade unions will not allow their men to lay more than 350 bricks a day, when they could lay 1,000, or even 2,000. In reality, in cottage work, with its short lengths of hollow walling and its constantly recurring

angles, 650 bricks represents a good day's work, and during the time of highest cost under the Addison scheme the output often reached this figure. At the same time we cannot leave the subject of trade unions without reference to what may be called local bullying. While headquarters may be anxious to deal sensibly and fairly, it is common knowledge to everyone who has been concerned in housing work that all kinds of frivolous obstructions are met with from the more irresponsible and officious of local leaders. If an attempt is made to provide badly needed employment by asking unskilled men to lay concrete blocks, the blocks must be laid dry, because if the men in laying the blocks spread a little mortar under each they are undertaking "a bricklayer's job," and everybody else downs tools. But for troubles of this kind a great deal of housing work could be done by intelligent men at present unemployed, with a few months' training, working under fully qualified workmen. There need really be no fear on the part of the unions that such a policy might lead to future unemployment, because the number of skilled men available, especially plasterers and bricklayers, is far below the number permanently required to cope with our yearly housing needs, which somehow or other will have to be met. The greatest mistake is in any way to inflate the cost of building. Trade unionism is not only desirable but necessary, and it will be more than unfortunate if it loses sympathy by countenancing an obstructive attitude of hectoring and red tape. The task of educating the rank and file is not a light one, and can only rest upon the shoulders of the trade union headquarters.

But while one-half of the community insists that "ca' canny," meaning the deliberate restriction of

output, is the source of all our troubles, the other half contends that rings and combines which force up the prices of materials are the real cause of high costs. If we examine the present prices of materials, and bear in mind the increased cost of labour, we can satisfy ourselves that rings and combines cannot be directly responsible for more than a small part of the price difficulty, although their indirect reaction upon the mentality of labour is considerable. In any case unaided private enterprise does not seem to be able to provide an adequate supply of material. We are hampered by a continued shortage of bricks in the south-eastern counties, with a rise in price constantly imminent, and this deficiency paralyses the house-building industry. The cost of transporting bricks from the north, where they are comparatively plentiful, is as great as the price of the bricks themselves. The Government* will be forced to interest itself in this question, either by providing easy money for the reopening of some of the hundreds of derelict brickfields that dot the home counties, or by following the example of the Government of India and burning bricks itself. It is sometimes argued that the builder should be able to purchase his materials direct, instead of through the merchant. In the majority of cases this would prove unworkable, because the merchant represents the storage cistern without which the economical distribution of material would be impossible. As to the charge of profiteering generally, it is a distressingly human characteristic to take advantage of other people's necessities; to vary a well-known phrase, the public necessity is the profiteer's opportunity, and any Government that

* For a full discussion on housing problems see "A Handbook of Housing," by B. S. Townroe (Methuen, 1924).

circumvents the profiteer in building materials will earn public gratitude.

Among the numerous suggestions for cheap housing none is more promising than that introduced, as a compromise between a temporary and permanent structure, by the late chairman of the Bristol Housing Committee, Councillor E. W. Savory. The construction consists of a steel skeleton carrying light steel roof trusses which, except in the bedrooms, are exposed. The walls are of 4-inch concrete or $4\frac{1}{2}$ -inch brick, protected on the outside by galvanised iron sheets, laid with the corrugations horizontal, tarred on both sides, and separated from the wall by a 2-inch air space. Such houses could only be of one storey, but they would be exceedingly economical and weather-proof. They would, of course, be vulnerable to extremes of temperature, but another brick or concrete wall could be substituted for the galvanised iron when times are less stringent. Care would have to be taken to prevent clinker or breeze concrete from touching and corroding the steel, and the corrugated iron would have to be kept tarred. When roofed with tiles, slates, or asbestos cement, not over-uniform in colour, these black houses would not be offensive to the eye, especially if a judicious use were made of creepers.

While no one could pretend that these houses would be ideal, yet if they were wedded to really good standardised plans they would provide reasonable accommodation at the lowest cost, and, as we have seen, would be open to subsequent improvement. We must candidly admit that it is impossible at present to build ideal houses in anything like sufficient numbers, and a compromise in construction such as this would at least enable families to move out of

their present horrors. It would be possible to build bungalows on the above principle without utilising steel at all, and their construction would be simplicity itself, the materials required being everywhere available, and thus the transport difficulty is reduced. But, of course, in any case the bye-laws would have to be waived to allow of such a temporary expedient.

For many years to come no party and no policy is going to provide adequate houses at a reasonable rent without heavy subsidising, which always sends up the cost. We must, therefore, compromise with some substitute. Above all let us at once rule out any thought of building houses unduly small, of leaving out bath-rooms and similar amenities, or of placing more than a strictly limited number to the acre. Our greatest housing danger is that in a panic we may fall to building dark, overcrowded, and unsatisfactory houses. No Government can be entitled to erect future slums out of public money, no matter how great the temptation to get nice-looking results on paper. The country is not going to be satisfied with columns of figures. But if any lowering of the standard permanently is ruled out, we are still entitled to adopt carefully chosen substitutes, and these may prove to be the key to the whole housing question. Such materials must be available or easily obtained everywhere, and must make no demand upon skilled labour. Asbestos cement sheets form excellent ceilings and soffits; for outside work, in every part of the world, corrugated iron is found acting as a stop-gap, and often as a permanency in the absence of better material. We have already discussed a possible use for this in the walls: why should we not make another use of it as a temporary roofing material? If we built houses up to the level

of the wall plate, and then clapped on for the time being a corrugated roof, we should save half the roof timbering, the transport of masses of slates and tiles, and a very large amount of time and money. An undertaking would have to be included to roof the house properly in a given number of years. It will be objected that, on the writer's own admission, iron would afford inadequate protection against heat and cold, to which one must reply that some such compromise is our least undesirable alternative, that this country is not liable to real extremes, and that wonders can be achieved with a little roofing felt and wire netting. Who can doubt that the families herded together like sheep would be grateful for a family roof, even if it were only a tin one !

CHAPTER XVIII

WARMTH WITHOUT WASTE

REFORMS in England blossom slowly, and none is likely to unfold with greater languor than that which aims at abolishing the domestic chimney and the open fire, both of which have contributed so much to our traditional architecture. But must we really attempt to abolish them, or can we by any means reform them and make them decorous members of society? With the chimney we will not here concern ourselves; it can be reformed only by reducing, and finally abolishing, smoke. The open fire is destined to go, on grounds of national economy, unless we can find means to make it much more efficient as a heating agent than it is at present. In making an impartial survey of our national mode of heating, let us first examine our prejudices, and make sure that they are not masquerading as virtues.

Prejudice is enemy to progress, and nowhere has its obstructive influence been more effective than in the Englishman's attitude towards heating. He has been baked brown in Continental hotels, and this experience has made him shy of any form of heating other than that enjoyed by the Druids. He fails to see that the waste of national fuel resources involved in Druidical heating practice is antisocial and unmoral, and that to waste fuel is as bad as to throw away food on the refuse heap. He will say that heating by hot air is unhealthy, that the radiant

heat of the open fire is "Nature's Way," and that the heat derived from radiators, hot stoves, or pipes leads to stuffiness, sore throats, and ill-health. But those who admire nature's way overlook the methods adopted by nature to prevent our winter climate from being as cold as that of Central Canada or Siberia. We all know how much we owe to the radiant heat from the sun in summer, but why is not the winter, when the sun is virtually absent, far colder than it is? Other countries on the same latitude suffer from a mean January temperature 60 degrees and more below ours. The answer is that nature has blessed us with the Gulf Stream, with a storage for heat in the form of surrounding seas, and with a prevailing wind warmed by the water. In other words, nature relies on the hot-air principle, known as "convection," more even than on the direct radiant heat of the sun. There is nothing, therefore, in the stock argument about "Nature's Way." A good deal of misunderstanding arises from the paradox that we get next to no radiation from "radiators"; properly speaking, these ought to be called "convectors," since their function is to warm the air by convection rather than to heat objects by direct radiation like the sun or an open fire.

The prejudice against warm air is doubtless due to the lack of ventilation usually associated with steam, hot-air, or hot-water heating, and in addition to this fatal stagnation rooms are often over-heated. Stagnation of the air reduces its cooling power, and a feeling of oppression results which is relieved when the air is set in motion; within reasonable limits impure air in motion is preferable to motionless pure air. This explains why electric fans in dining cars,

and ladies' fans in the theatre, neither of which helps to purify the air, are yet effective in relieving oppression.

An objection frequently urged against heating by convection is that it "dries the air." Now the degree of moisture in the air is a highly important factor in health and comfort, and the means of measuring it is available to everyone in a common wet and dry bulb thermometer. This consists of an ordinary thermometer placed next to a similar thermometer which has its bulb wrapped in a fine cloth the end of which is immersed in water, like the wick of a lamp. The reading on the wet bulb thermometer is normally some 5 degrees lower than that registered on the ordinary thermometer, and the difference is a measure of the moisture in the air. If the air is saturated with water the two thermometers will register the same temperature, but if the air is excessively dry the wet bulb reading is relatively too low, and moisture can be added to the air by evaporating water on the hot surface of the radiator. Since it is this double reading that really indicates the "comfort-temperature" of a room, it has been advocated that the ordinary thermometer should give place to the wet and dry bulb in everyday use.

When sitting in front of an open fire one is ready to tolerate more draught, and consequently more outside air, than when sitting in a room heated by a radiator. Conditions of moisture and motion are thus kept more or less normal, and this, coupled with an innate conservatism, must account for the belief in this country that the open fire is the only healthy form of heating. The open fire is terribly inefficient, and is never relied upon in a cold country. In the

first place it warms from one direction only by radiation, while the cold air chills everything not directly exposed to the rays; consequently, a man who wants to keep warm in a really cold room has to keep turning round. Also, only about 25 per cent. of the available heat from the fuel is utilised. In other words, for every pound spent on fuel for the open fire, only five shillings' worth of heat is obtained and fifteen shillings is lost. This is not a good bargain.

Where, then, does this enormous quantity of heat go, and why do we not utilise it? Normally it goes up the flue and heats the solid brickwork of the chimney before it escapes, still hot, into the open air to warm the countryside. This applies equally to the heat from stoves, ranges, open fires, and even to gas fires. It should be noted that if a stove were in the open air outside the house, but the flue carried up indoors in such a way as to warm the house, this singular method of heating would be more efficient than when the stove is installed in the ordinary way, in spite of the wastage of all direct heat from the stove itself.

If a stove is placed 20 feet away from an ordinary fireplace and connected to the flue with 5-inch sheet iron piping, laid nearly horizontally, the heat obtained from the 20-foot length of piping is greater than that obtained from the body of the stove, and, more astonishing still, the heat of the pipe where it enters the wall is not noticeably less than where it leaves the stove. A further 20 feet of vertical piping would therefore provide almost as much heat as the original length. The heating surface of an ordinary coke stove may be taken as about 7 square feet, while the 20-foot pipe presents 26 square feet, up which

all the hot gases must pass. It is not, therefore, astonishing that the heating power of this pipe exceeds that of the stove, and is equal to a very large series of hot-water radiators without entailing any of the cost; for not only is a hot-water apparatus expensive to install, but the heating of water greatly increases the quantity of fuel required. The heating value of such a pipe is greater when it is dull black than when it presents a bright surface, because a dull black surface parts with its heat more rapidly than a bright surface.

But, it will be argued, admitting the efficiency of the flue, there are obvious difficulties when it comes to using it as a heating agent. It is unsightly, and the heat, being concentrated, cannot well be carried to convenient points like hot water. It is in heating the basement passages of large houses that such horizontal flues can be of the greatest service, for if a basement can be kept warm and dry the house above will be free from the chill that has its origin in cold and damp basements; draughts will be warm instead of cold, and the floors of the rooms above will be comfortably warm—an important point, as the Romans well knew when they took so much trouble to heat their floors and walls by means of flues. The basement may sometimes be used as a further source of heat by fixing a stove in a small hot chamber with a grating over it in the ceiling leading to the main centre—generally the staircase hall—of the house. The cool air supply must be admitted into the hot chamber through large openings near the floor, and it should be noted that even this air, before the stove has warmed it, is not unduly cold because it has been heated by the flue pipe to which reference has already been made, and

which lies mostly outside the hot chamber. Experiments on these lines have proved that the uprush of hot air into the body of the house is remarkable and of the greatest value in keeping the house dry. Where the basement is a small one and all in use the grating may not be desirable because noise, and often the smell of cooking, would be communicated to the floor above.

In houses of all sizes, including small ones that have no basement, experiments should be made in the utilisation of flue heat, whether from the kitchen range, when the hot gases could be allowed alternative routes for summer and winter, or from a stove in the main hall, which would only be lighted when the house required warming. The main difficulties to be met are as follows:

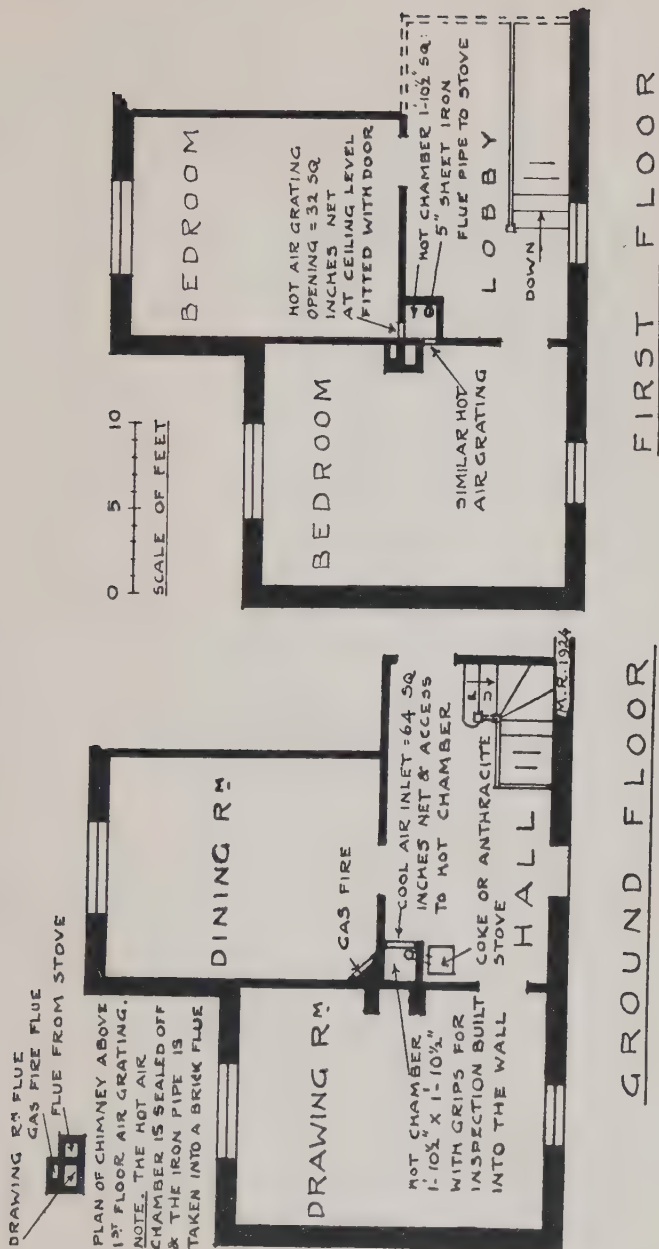
1. To distribute the heat to different rooms.
2. To ensure against the danger of iron flues perishing and to provide for renewal.
3. To guard against the danger of fire from the hot piping.

The diagram illustrates a suggested method of utilising the flue heat from a stove in the hall to warm two bedrooms over, and the above-mentioned difficulties are met thus: heat is distributed from a hot chamber which contains the iron flue pipe; the cool air from the hall enters through a grating near the floor; in the chamber it is heated by the flue and rises to the upper part of the chamber which is sealed off; just below the top of the chamber hot-air gratings are fitted into its walls to deliver into the bedrooms. These gratings are placed near the ceilings of the first-floor rooms and are fitted with air-tight doors that can be closed at will. The hot chamber should be large enough to allow a man to

climb up in comfort for inspection and renewal of pipes, for which purpose an access door should be placed near the bottom and hand grips built into the wall to facilitate examination. The hot chamber, being built of $4\frac{1}{2}$ -inch brick or 4-inch concrete blocks, would be safe from fire, being itself constructed like a flue, and the flue pipe would be clamped at intervals in the corner, delivering into an ordinary brick flue where the hot chamber ends. The hot-air inlets to the bedrooms are placed high up to tap as much flue heat as possible and to avoid excessive communication of sound. Experience shows that a radiator or other source of heat near the ceiling is not appreciably less efficient than the same supply of heat placed low down, for hot air tends at once to rise to the ceiling. On the same principle a room might be warmed by means of two openings into the hot chamber, one low down to admit the cool air, and the other high up to readmit the air when it has been heated; the hot chamber in this case would be sealed above and below.

The diagram, for convenience, only shows two bedrooms on the first floor, but the hot inlets could be carried in ducts across passages, or the hot chamber could be carried up to warm rooms on the second and third floors, provided always that the cool-air inlet was proportional to the size of the hot outlets. The hot chamber is here shown connected up with an ordinary chimney stack containing a common flue and a small gas flue, but the chamber could contain more than one flue.

In a house fitted with the system shown in the diagram the entrance hall would require a full allowance of fresh air from outside, or the hot chamber could receive its air-supply direct from the



FIGS. 3 AND 4.—HEATING DIAGRAMS.

open. Warm air circulating through the rooms would encourage more open windows and so air stagnation would be avoided and health and comfort increased. The attraction and associations of the open fire are deeply rooted; such a fire contributes definitely to the appearance of comfort and warmth, and if we could obtain a cheap and efficient smokeless fuel and utilise the flue heat, the objections to the open fire would vanish. The principle of the hot-air chamber would be equally applicable, and by its aid we could wrest a large proportion of the 75 per cent. of heat value which we now send to waste. Even the most up-to-date and approved methods of central heating as a rule make no provision whatever concerning the flue.

Heating is in its infancy, especially in England, and sooner or later we shall be forced to break away from the 25 per cent. efficient open fire and brick flue. The development will profoundly affect the future of planning and design, and the heating specialist and engineer cannot advance without the architect.

CHAPTER XIX

A FANTASY—THE CHIMNEY

ONCE upon a time there was a house with one chimney, and no smoke ever came out of it. It was a large house built on a hill where everyone could see it; and people wondered about the chimney. This was how it happened. The man that built it was rich and had ideas; very good ideas too. To start with he employed an architect; then he used the best materials, encouraged craftsmen, and bought good modern furniture and fittings under the ægis of the Design in Industries Association. But his noblest ideas were about smoke; he had no fires at all; everything was electric. His architect warned him that it would be expensive, but he did not mind. He was a logical man prepared to pay for his convictions, and he said that no flue must be built inside (only ventilating shafts), and there must be no chimney outside. The house was to be a witness for all time. His wife, who was just like him, agreed, and it was built and they settled into it. After a while they had a baby, and both father and mother got more ideas than ever. Everything about the boy had to be model. There was a model nursery and a model pram, the child ate vitamins, wore undyed woollies, only looked at beautiful things, and was told no fiction in case it destroyed his imagination. Of course, he had no Nanny. There is an Irish lyric which begins: "I do be

thinkin' God must laugh the time he makes a boy," and though that little boy had never heard about God—only The Good—God had laughed, and the little boy discovered Jane, the scullery maid. Jane was exactly on the little boy's level. She was simple, sensational, and crude; they ate sticky sweets together out of a paper bag, and she told him fortunes in tea-leaves about sweethearts. The interviews were as precious as stolen things can be. Then there came the little boy's sixth Christmas, and in the morning he had bounced tearfully into his parents' room and found them sitting up in hygienic beds eating apples. "Be calm, darling," said his mother in the crooning tone intended to Coué away passion. The boy howled the louder, and flung himself on his father's bed in the complete abandonment of infant grief. "He is holding something," said his father, and very gently he took away the treasure. It was long, damp with tears, woolly, and black. It was Jane's stocking, and it had not been washed last Monday. "Empty, empty," said the little boy; "Jane said of course he couldn't get down with no chimney." "Who?" said his mother. "Father Christmas!" wept the child. The man with ideas looked at his wife, and she shook her head. "I never knew he had heard of the rubbish. I will speak to Jane." "Daddy," cried the little boy, "send for the man to build a chimney." Men are weaker than women, and his father rubbed his head; but his mother was not going to be bested by Jane. She reasoned (she believed that children enjoyed hearing reason); and she told him how Daddy had made a beautiful house with clean air and no space wasted, and how proud he ought to be. When she had finished the little



Drypoint by Stanley Hamp.

"THE HOUSE WITH THE ONE CHIMNEY."

Facing p. 188.

boy kissed his father: "I like Jane. And, Daddy, it need only be one chimney and it needn't smoke." And in the long run his mother did not speak to Jane, but, when the chimney was finished, she read a paper at the Ladies' Lyceum on "Folk Lore and the Child Instinct"; while his father put by Jane's stocking (still unwashed) for next year.

* * * * *

So much for fantasy, but the chimney remains a household word. We find it in history and in figurative speech the symbol of home and height, or of friendly industry in kiln and oast-house. It asserts the impress of applied science and dominates the factory, steamship, and express.

Although the word derives its origin from the Greeks through the Romans, we owe the chimney habit to Northern Europe. The Romans did not welcome the chimney shaft as an architectural possibility. In their famous heating experiments they let the flue escape through a wall opening, and if it had to break the roof it was hidden behind a balustrade or disguised as an ornamental vase; its classical significance is almost negligible. Shakespeare with a splendid disregard of accuracy in local detail, makes Marullus rebuke the citizens in "Julius Cæsar":

"O you hard hearts, you cruel men of Rome!
Knew you not Pompey? Many a time and oft
Have you climb'd up to walls and battlements,
To towers and windows, yea, to chimney-tops,
Your infants in your arms, and there have sat
The live-long day, with patient expectation,
To see great Pompey pass the streets of Rome."

Even in England we have to wait till the eleventh century for the rudimentary beginnings of the made hearth and built-in flue, and then only in houses

of consequence. The main hall fireplace was built in an outside wall, and, as the Quennells remind us in their "History of Everyday Things,"* the flue was carried at an angle through the thickness of the wall, and came out into the open air behind one of the great buttresses. Thus the hearth tradition had begun, but its outside fellow, the chimney,† was only in embryo. It was not until the reign of Henry VIII. that the upward thrust began to assume general importance, when the conical cap with two side openings of the later medieval castles were superseded by the shaft with a centre opening. The Tudor mason recognised an opportunity after his own heart, and the purely utilitarian was transfigured into terms of art. At the same moment those other natural artists born of the Renaissance were glorying in the noble chimneys of the Loire châteaux. With all this magnificence before us it is difficult to realise that the chimney stack did not come into common use until still later. In the middle of the sixteenth century it was usual for the hall smoke to meander through the open louvre in a house of yeoman status. Ireland is proverbially behind England, but it is none the less instructive to read the benevolent, if arbitrary, ordinance of Sir Lawrence Parsons, dated 1627: "A BYELAW for dwelling houses in Birr without chimneys.

"Ffor as much as it is seene by fearfull experience that many townes and villages have binn consumed by fire in divers p̃ts of this realme and especially occasioned thorowe fires made without chimneys;

* B. C. Batsford, Ltd., 1922.

† Those interested in the development of the chimney should see "The History and Development of Chimneys," by Gordon Sanderson, *The Architectural Association Journal*, vol. xxi., 1906.

Therefore I doe ordeyne that if any teñnte or under-teñnte in my towne of Birr shall after Alhallowtide next kepe any fire whatsoevr eyther in dwellinge house or smithes forge or otherwise without having a stone chimney (if they be tyed thereto by the tenor of their leases) or els a forest chimney wherein to make their fires. And whosoevr makes default herein shall be banished from the towne whereof they are to take this notice and forewarninge at their pñills."

The Chimney Money or tax imposed by statute on fire hearths and stoves showed that even in the reign of Charles II. the necessity for warmth was regarded as a legitimate excuse for revenue; probably to the astute monarch all was fish that came to his net, and he sensibly selected an amenity that no one was likely to give up. This unhomely impost was abolished by William and Mary, and from that time the chimney as an architectural feature gradually began to lose external splendour, until in the Georgian days it became rationalised, hid itself behind a parapet, and so reverted to its original classical seclusion. The mighty openings inserted during the sixteenth century in houses of an older date were usually evolved when the big original halls were converted into a ground or first and second floor, and were often associated with an ingle-nook, where owner and bacon were affably smoked in company. In the middle of the seventeenth century, flues became smaller and were grouped together, appearing at last in the rectangular stack. Thus, practicality and the classical Georgian tradition united to rob the chimney of its glory, until we find it degenerated into the deformity that now begrimes our modern cities.

“ ‘Delightful prospect, Sam,’ said Mr. Pickwick.

“ ‘Beats the chimbley pots, sir,’ replied Mr. Weller, touching his hat.

“ ‘I suppose you have hardly seen anything but chimney pots and bricks and mortar, all your life, Sam,’ said Mr. Pickwick, smiling.”

Sam may well have been thinking of the view outside Waterloo Junction, and the outrage to decency which it exposes. The precise row of uninspired cylinders of the better-class outer ring has given way to a jumble of discoloured freaks. Squeaky cowls, stunted pots, broken and corroded wire domes, and jagged and bloated outlines belch their filth and compete in discord against the fancies of the down draught to which a city chimney is susceptible. We find ourselves crying out for King Charles and his tax, as a possible saviour to our civilisation. It is time for a burst of reforming energy. The seat of the avowed sentimentalist is screwed down in complacency, and sheltered behind him are those other interests that possess no interest save their own.

Somehow or other befouling smoke has got to go, and it is our job to exorcise it. With smoke will vanish much of the sordid ugliness of our city life, and the most exhausting of woman’s wasted labours. But our reformers must not be tactless. We still want our chimneys, comely and demure, springing from a comfortable hearth, and, if science will give us a smokeless fuel, we want a hearth with an open fire. In the country we may still enjoy this luxury without offence; there, instead of confronting the hunchbacked cowl, we can glance up and nod to the traditional stone that sits and resists the tricks of the down draught; in one particular chimney we can listen to the cricket; by another our neighbour will

talk to us of the local traditions of the hearth and its iron furniture; and then we can look into the embers and see visions—such, indeed, is our family altar, and its open flame is very dear. But in the midst of these agreeable reflexions let us not forget that altars have their sacrifices, and that to the English home god we have offered up the bodies of little English boys. It was not wickedness that killed and tortured these children, nor wicked people who wanted their chimneys cleaned; it happened because people did not think nor trouble to understand what it meant.

It took ninety years to pass legislation adequate to stop this preposterous cruelty, and this was achieved only fifty years ago. It must not take another ninety years to end the tyranny that robs millions of other little children of the sun and light that is their natural heritage.

We have now been definitely promised Government legislation that will deal with smoke abatement, but until a cheap smokeless fuel is evolved, the reduction of unnecessary factory smoke will be more feasible than restrictions upon the open fire.* This results in half our present air pollution, and until we can abolish its smoke emission, we can only strive to reduce it. Without in the least wishing to belittle the zeal of those reformers who have done so much to expose the abuse, one would like to suggest a word of warning and advise them, when unsheathing the sword, to use the flat side rather than the edge; in fact, to take a lesson from Lord Newton, Chairman of the Departmental Committee on Smoke Abatement, and be persuasive rather than provocative. The hearth is a beloved feature of home, and expresses

* "The Smokeless City," by E. D. Simon and Marion Fitzgerald (Longmans).

more than can be defined in British Thermal Units; let us do our best to remove and reduce what offends, while preserving what satisfies our native tradition. In the last chapter we considered heating as it is likely to affect future design and planning, and, since every unnecessary fire means unnecessary expense, and, under our present methods, additional smoke, modern heating methods will have a direct bearing on the future of the chimney.

The future design of the domestic chimney is likely to be undertaken in restraint and delicacy, rather than in the spirit of emphasis. The Victorian stack was coarse and bold; its projections oversailed clumsily, and its pots were tall, heavy, and unconsidered. In ornamental flight it followed grotesque imitations of Tudor or Renaissance. The modern stack has the spirit of the built-up pier, its top courses oversail little, if at all, and its beauty depends mainly upon proportion; the cumbersome pot is avoided by keeping the stacks as high as the necessity for a good draught decrees, and small, neat pots are used. The chimney stack may be of real assistance in uniting the colour scheme or texture of a building. When whitened walls are picked out with red brick details, or tile on edge, the final introduction of a white stack with a slight tile oversail and good terracotta pot completes the effect, while the corner quoins of a brick or stone building are often continued in the chimney stacks.

The factory chimney will develop with the advance of factory architecture, sometimes on the stately lines of the tower, more often in the upward rounded thrust, following the column in diminution and entasis, but with a deep and gradually projected cap. The dramatic significance will be innate rather than

pressed; quality will be sought in brickwork and line, and, where several chimneys are concerned, in the opportunity for grouping. If the regulations for automatic smoke consumption were made obligatory, as it is on the German bank of the industrial Rhine, the English factory chimney might carry on the message of the spire in another guise, as the symbol of an industry that was justifying its existence. We may congratulate ourselves that the march of reform will not altogether deprive us of the chimney, even if—as we hope—it tends considerably to reduce its numbers, it should only leave it in more isolated importance. The big house with one chimney is likely to remain a fantasy, but were it to materialise the design of so conspicuous a feature would not be neglected by the architect. Perhaps it would not be pushing the fantastic too far to suggest that the partial suppression of the chimney will lead to its greater glory in evolution, where it is still to exist; more especially in power station and factory—a functional asset, and an architectural opportunity.

In visioning the future we cannot do better than gaze in imagination at that emperor among chimneys—still unfortunately a fantasy—that may some day play the architectural rôle of a Statue of Liberty in Dublin Bay: a shaft to a Power Citadel* that would take upon itself the duties of every industrial chimney in the City of Dublin, and would convert into motive power the whole of the raw material of energy which enters the harbour. Of this we are told that: “Though many chimneys create a dismal effect, there is a grandeur about a single gigantic shaft with

* “Dublin of the Future: The New Town Plan,” by Patrick Abercrombie, Sydney Kelly, and Arthur Kelly (The University Press of Liverpool and Hodder and Stoughton, Ltd.).

its plume of smoke curling from the brazier-shaped summit. The building adumbrated in the study is confessedly of huge size: the tower 600 feet high, and accommodation provided for ranges of workshops and machinery plant. Architecturally, its effect at the entrance of the harbour and as the centre point of the reclaimed Dublin Bay would be magnificent."

Architecture has long been accepted as a faithful interpreter of the past, and we know that she reflects immediate needs and aspirations; is it possible that she can assume the mantle of leadership? Organisation and personal initiative represent order and freedom in social life, and they could not be better expressed, in balanced proportions, than in such a symbol of co-operation and enterprise as this monumental chimney at a nation's gate.



Professor Patrick Abercrombie and S. and J. Kilby, Architects.

PROPOSED DUBLIN POWER CITADEL.

Facing p. 196.

CHAPTER XX

THE FOURTH CIRCLE

WE have looked at architecture first as it affects the recipient through the four circles of the sensational, the emotional, the intellectual, and the real; and we have seen that the first three represent different modes of expression. Following these up, we have traced the predominance of the second circle in Gothic freedom, and of the third in classical order. We next grouped the elementary principles of architecture under four heads, and considered these separately, and, having examined the trend of modern design in various classes of building, we passed on to consider some special problems, such as acoustics, housing, and heating. It has already been emphasised that architecture covers a vast field, and presents more facets than could be touched upon in a book far exceeding this in scale and intention. The most that one can hope to achieve is to arouse interest and suggest a train of thought that may form a basis for discrimination, and so prepare the ground for a live architecture that would truly reflect not only our needs, but our aspirations; and it may be repeated that only through the co-operation of the layman is an adequate architectural expression possible.

Our three circles of expression have provided a basis for an examination of art, as it is translated into terms of building. We have seen that the child

can best be approached through the first circle, that the second makes the most general appeal to the mass of civilised mankind, when it has become conscious that art values exist, and that thousands can enjoy the æsthetics and perfection in poetry and technique attainable in the third without yet recognising the fourth—the only reality behind art itself. These successive steps might lead one to suppose—assuming, of course, that one accepts them at all—that the ultimate reality of art is hopelessly beyond the reach of any but the highly intellectual; it must, therefore, be repeated that in our figure the first and most primitive circle may merge directly into the fourth with hardly a trace of the intermediate two, and a work to which this applies takes precedence of the most highly intellectualised creation, if that can reach no further than the intellect. We have seen that modern architecture tends to subordinate the second and third circles to the elemental and sensational force of the first, and we have suggested that art history would lead us to expect this reversal at a time of rebirth. If proof is demanded of the importance of the first circle, one has but to refer to nature: it is the sensational appeal of the stars that has ever impressed mankind, and that delivers the spiritual message. They are neither emotional, æsthetic, nor intellectual, but to most men they are witnesses of their Creator.

“The sun-orb sings, in emulation,
’Mid brother-spheres, his ancient round:
His path predestined through Creation
He ends with step of thunder-sound.
The angels from his visage splendid
Draw power, whose measure none can say;
The lofty works, uncomprehended,
Are bright as on the earliest day.”

Architecture is likewise capable of expressing something greater than æsthetics, and even a totally unintellectual work can sometimes expand into the fourth circle. The fully developed man is naturally drawn to the intellectual, hence he will respond to the work of art that demands his highest powers of appreciation; he will thus approach the fourth circle through the combined range of senses, emotion, and intellect. The cult of æsthetics finds its place as a stepping-stone, but no matter how beautiful this stone may be, it is not in itself a justification of the artistic ideal. We must make our way on, and not rest content on that extremely alluring but ephemeral stone; but we must remember that the man who creates a beautiful building may be helping others into the last circle that he cannot, by that route, enter himself. To some extent we can describe the other circles; admittedly, we cannot define the fourth at all; this, however, proves nothing, because we cannot even define a straight line if our definition is to possess a general practical application. Architecture, in its fourth circle, should stand as a reflection of something greater than itself, even when shining in the humblest building. Whether it be a town council considering a new housing scheme, a firm contemplating a factory, or a farmer building a cottage, if these people deliberately leave out the higher significance by ignoring the architecture, they are shirking one of the chief responsibilities that God has placed upon their shoulders. We are all responsible for the spiritual enlightenment of ourselves and our fellows, and are in duty bound to use every spiritual force to attain this end.

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